BIOMEDICAL SCIENCE (BIOM)

BIOM*2000 Concepts in Human Physiology Fall and Winter (LEC: 3) [0.50]
This is an introductory course that examines the fundamental integrative aspects of human physiological systems and their role in the maintenance of homeostasis. Course content is intended to serve the needs of non-bioscience students and includes the study of aspects of cellular metabolism, nerve and muscle function and general anatomy and function of the cardiovascular, respiratory, gastrointestinal, immune, central and peripheral nervous, endocrine, renal and reproductive systems. This course cannot be used to fulfill requirements for any biological science minor.
Offering(s): Also offered through Distance Education format.
Restriction(s): ANSC*3080, BIOM*3200, HK*2810, HK*3810, HK*3940, ZOO*3200, ZOO*3210, ZOO*3600, ZOO*3620. Not available to BSC Students in biological science specializations or BAS program.
Department(s): Department of Biomedical Sciences
Location(s): Guelph

BIOM*3000 Functional Mammalian Neuroanatomy Fall Only (LEC: 3, LAB: 2) [0.50]
The main objective of the course is to understand the functional organization of the mammalian nervous system. It includes a review of the major cell types found in the nervous system and an overview of the basic physiological principles of brain function followed by a detailed three dimensional and histological examination of the mammalian brain and spinal cord. Emphasis is placed on understanding the relationship between anatomy, physiology and behaviour.
Prerequisite(s): 1 of BIOM*3200, HK*3810, HK*3940, NEUR*2000, PHYS*2030, PSYC*2410, ZOO*3200, 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. Please see the department of Biomedical Sciences website for more information.
Department(s): Department of Biomedical Sciences
Location(s): Guelph

BIOM*3010 Biomedical Comparative Anatomy Fall Only (LEC: 2, LAB: 3) [0.50]
This lecture and laboratory course is designed for students interested in the biomedical and health sciences. Labs provide an introduction to veterinary anatomy, with small and large animal dissections. Human and clinical veterinary anatomy, as well as biomechanical and functional differences are considered.
Prerequisite(s): 1 of BIOL*1070, BIOL*1080, BIOL*1090
Restriction(s): This is a Priority Access Course. Enrolment may be restricted to particular programs or specializations or semester levels during certain periods. Please see the department of Biomedical Sciences website for more information.
Department(s): Department of Biomedical Sciences
Location(s): Guelph

BIOM*3040 Medical Embryology Winter Only (LEC: 3, LAB: 3) [0.75]
The patterns and principles of normal embryonic and fetal development of mammals are covered with an emphasis on comparison to adult anatomy and medical implications. In laboratories, the teratology of prenatal anomalies are also examined . There is a focus on gathering embryological information and developing scientific reasoning skills through essays and presentations.
Prerequisite(s): (BIOL*1070, BIOL*1090), (1 of BIOL*1080, BIOM*3200, HK*3810, HK*3940), (1of BIOM*3010, HK*3401, HK*3501, ZOO*2090)
Restriction(s): This is a Priority Access Course. Enrolment may be restricted to particular programs or specializations or semester levels during certain periods. Please see the department of Biomedical Sciences website for more information.
Department(s): Department of Biomedical Sciences
Location(s): Guelph

BIOM*3090 Principles of Pharmacology Fall and Winter (LEC: 3) [0.50]
This course will introduce students to the basic principles of pharmacology. Topics to be covered include pharmacokinetics and drug-receptor interactions as well as the mechanism of action and toxicity of drugs acting on the cardiovascular and central nervous system.
Offering(s): Also offered through Distance Education format.
Prerequisite(s): BIOC*2580, (1 of ANSC*3080, BIOM*3200, HK*3810, ZOO*3200, ZOO*3600)
Department(s): Department of Biomedical Sciences
Location(s): Guelph

BIOM*3200 Biomedical Physiology Summer, Fall, and Winter (LEC: 6) [1.00]
This course focuses on the normal functioning of mammals. The physiology of the nervous, muscular, endocrine, reproductive, cardiovascular and digestive systems and homeostasis as reflected in respiratory and renal function is treated in a detailed manner. The integrative nature of various physiological systems is highlighted and cellular and molecular information is incorporated to enhance the understanding of these systems. Aspects of medically significant changes in the mammalian physiological systems are also introduced.
Offering(s): Also offered through Distance Education format.
Prerequisite(s): BIOC*2580
Restriction(s): HK*3810. This is a Priority Access Course. Enrolment may be restricted to particular programs or specializations or semester levels during certain periods. Please see the department of Biomedical Sciences website for more information.
Department(s): Department of Biomedical Sciences
Location(s): Guelph

BIOM*3210 Critical Thinking in the Health Sciences Fall Only (LEC: 3) [0.50]
This course will explore a variety of issues related to the scientific ideals and practical realities of health sciences research and its clinical applications. Topics will include critical thinking, critical appraisal of the medical literature, the principles of evidence based medicine, and selected issues related to scientific integrity.
Prerequisite(s): 7.50 credits including (1 of BIOL*1070, BIOL*1080, BIOL*1090)
Restriction(s): This is a Priority Access Course. Enrolment may be restricted to particular programs or specializations or semester levels during certain periods. Please see the department of Biomedical Sciences website for more information.
Department(s): Department of Biomedical Sciences
Location(s): Guelph

BIOM*4030 Endocrine Physiology Winter Only (LEC: 3) [0.50]
The course is designed to provide a senior level introduction to the endocrine discipline, focusing largely on mammals, with some examples taken from other vertebrate taxa. The course will give an introduction to the historical developments in the discipline, explore the actions of hormones and other chemical signalling pathways, and examine processes of hormone synthesis and secretion. The focus of the course will be the integrative nature of hormone actions in the regulations of various physiological processes in animal systems, such as metabolic control, growth, and reproduction. The course will also explore aspects of "non-classical" endocrinology, endocrine dysfunctional states and emerging environmental concerns related to endocrine dysfunction.
Prerequisite(s): BIOC*2580, [1 of BIOM*3200, HK*3810, HK*3940, (ZOO*3200, ZOO*3210), 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. Please see the department of Biomedical Sciences website for more information.
Department(s): Department of Biomedical Sciences
Location(s): Guelph

BIOM*4050 Biomedical Aspects of Aging Winter Only (LEC: 3) [0.50]
Aging is accompanied by alterations in the physiological and biochemical functioning of body organ systems. The relationship between aging and the cardiovascular, respiratory, digestion/nutrition and reproductive systems will be discussed as will homeostatic functions associated with bone metabolism and fluid balance.
Prerequisite(s): 1 of BIOM*3200, HK*3810, HK*3940
Restriction(s): This is a Priority Access Course. Enrolment may be restricted to particular programs or specializations or semester levels during certain periods. Please see the department of Biomedical Sciences website for more information.
Department(s): Department of Biomedical Sciences
Location(s): Guelph

BIOM*4070 Biomedical Histology Fall Only (LEC: 2, LAB: 3) [0.50]
This histology course is designed for students interested in biomedical sciences. Basic tissue types and major organ systems of mammals will be examined using virtual microscopy. Lectures and discussions will focus on the relationship of tissue structure to cell and organ functions and the effects of injury or disease on microscopic structure.
Prerequisite(s): (MCB*2050 or MCB*2210), (1of ANSC*3080, BIOM*3200, HK*3810, HK*3940)
Restriction(s): ZOO*3000. This is a Priority Access Course. Enrolment may be restricted to particular programs or specializations. See department for more information.
Department(s): Department of Biomedical Sciences
Location(s): Guelph

BIOM*4090 Pharmacology Fall and Winter (LEC: 3) [0.50]
Topics covered in this course include drugs used in the treatment of inflammatory, allergic, hormonal, infectious, neoplastic and hemorrhagic/thromboembolic disease. The focus will be on drug targets and mechanisms of action that explain therapeutic and toxicological effects.
Offering(s): Also offered through Distance Education format.
Prerequisite(s): BIOM*3090
Department(s): Department of Biomedical Sciences
Location(s): Guelph

BIOM*4110 Mammalian Reproductive Biology Winter Only (LEC: 2, LAB: 2) [0.50]
This multidisciplinary course provides an introduction to various aspects of mammalian reproduction of medical and veterinary significance. The course will cover the normal physiology and gross and micro anatomy of the female and male reproductive systems. Placentation, pregnancy and post-partum physiology will also be addressed. The impact of the reproductive biology on social and economic issues will be discussed.
Prerequisite(s): (1 of BIOM*3010, HK*3401, HK*3501, ZOO*2090), (1 of BIOM*3200, HK*3810, ZOO*3210, ZOO*3620)
Department(s): Department of Biomedical Sciences
Location(s): Guelph

BIOM*4150 Cancer Biology Winter Only (LEC: 5) [0.50]
The main objective of this course is to familiarize students with general concepts in cancer biology. Each topic is presented as an overview, emphasizing recent developments in the field. There is additional focus on developing scientific skills, including critical analysis of current literature and the ability to give logical and concise oral presentations.
Prerequisite(s): MBG*2040, MCB*2050, (1 of BIOM*3040, BIOM*4070, ZOO*3000)
Department(s): Department of Biomedical Sciences
Location(s): Guelph

BIOM*4180 Cardiology Winter Only (LEC: 3) [0.50]
This course will explore the concepts and principles of normal heart function, with a focus on the molecular and cellular basis of cardiac physiology. These elements will be further developed by examining changes that occur in a range of cardiovascular diseases and conditions.
Prerequisite(s): (1of BIOM*3200, HK*3810, HK*3940), (1 of BIOM*3010, HK*3401, HK*3501, ZOO*2090)
Restriction(s): Registration in the BSC.BIOM Major.
Department(s): Department of Biomedical Sciences
Location(s): Guelph

BIOM*4300 Biomedical Communications Fall Only (LEC: 3) [0.50]
The primary purpose of this course is to develop students' ability to communicate scientific information logically and concisely, in written and oral formats. Students will be taught the basic principles underlying logical development of scientific arguments and hypotheses. Using practical examples drawn from current scientific literature, students will be exposed to the methods currently used by scientists in researching their subjects and writing about them in an effective fashion. Through written and oral presentation assignments, students will develop the skills necessary to confidently develop scientific presentations and communicate their knowledge and ideas to others.
Prerequisite(s): 14.00 credits including BIOL*1080, STAT*2040
Restriction(s): Restricted to students in BSCH:BIOM.
Department(s): Department of Biomedical Sciences
Location(s): Guelph

BIOM*4500 Literature-based Research in Biomedical Sciences Summer, Fall, and Winter (LAB: 6) [0.50]
This course involves independent literature research of a current topic in any of the biomedical sciences (such as anatomy, physiology, pharmacology, toxicology, genetics, biochemistry). Students will present critical appraisals of primary research literature and are required to submit an annotated bibliography and research proposal in addition to their publication-quality literature review paper. 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): 12.00 credits
Restriction(s): HK*4230. Instructor consent required. Enrolment restricted to BSC.BIOM majors or BSC.NEUR minors.
Department(s): Department of Biomedical Sciences
Location(s): Guelph

BIOM*4510 Research in Biomedical Sciences Summer, Fall, and Winter (LAB: 12) [1.00]
In this course students will conduct and individual research project on a current topic in any of the biomedical sciences (such as anatomy, physiology, pharmacology, toxicology, genetics, 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*4521, BIOM*4522. Instructor consent required. Enrolment restricted to BSC.BIOM majors.
Department(s): Department of Biomedical Sciences
Location(s): Guelph

BIOM*4521 Research in Biomedical Sciences Fall Only (LAB: 12) [1.00]
This is the first part of the two-semester course BIOM*4521/2. In this course, students will conduct an extensive individual research project on a current topic in any of the biomedical sciences (such as anatomy, physiology, pharmacology, toxicology, genetics, biochemistry). Students work under the supervision of individual faculty. Students should make arrangements to find their own faculty advisor well in advance of course selection. A departmental registration form must be obtained from the course coordinator and signed by the faculty advisor before students can be admitted into the course. This is a two-semester course offered over consecutive semesters. When you select it you must select BIOM*4521 in the first semester and BIOM*4522 in the second semester. A grade will not be assigned in BIOM*4521 until BIOM*4522 has been completed.
Prerequisite(s): 14.00 credits
Restriction(s): BIOM*4510. Instructor consent required. This is a Priority Access Course. Enrolment may be restricted to particular programs. See department for more information.
Department(s): Department of Biomedical Sciences
Location(s): Guelph

BIOM*4522 Research in Biomedical Sciences Winter Only (LAB: 12) [1.00]
This is the second part of the two-semester course BIOM*4521/2. In this course, students will conduct an extensive individual research project on a current topic in any of the biomedical sciences (such as anatomy, physiology, pharmacology, toxicology, genetics, biochemistry). Students work under the supervision of individual faculty. Students should make arrangements to find their own faculty advisor well in advance of course selection. A departmental registration form must be obtained from the course coordinator and signed by the faculty advisor before students can be admitted into the course. This is a two-semester course offered over consecutive semesters. When you select it you must select BIOM*4521 in the first semester and BIOM*4522 in the second semester. A grade will not be assigned in BIOM*4521 until BIOM*4522 has been completed.
Prerequisite(s): BIOM*4521
Department(s): Department of Biomedical Sciences
Location(s): Guelph