COURSES

Academic Course List
Kinesiology and Health Science students can choose from a diverse selection of courses. This section contains short descriptions of all academic and practicum courses. View Course Timetables on the Current Students Website for offerings, not all courses are offered every academic year.

NOTE: BSc Students – courses indicated in BOLD DO NOT count for science credit.

1000 Level
HH/KINE 1000 6.00 Sociocultural Perspectives in Kinesiology
HH/KINE 1020 6.00 Fitness and Health

2000 Level
HH/KINE 2011 3.00 Human Physiology I
HH/KINE 2031 3.00 Human Anatomy
HH/KINE 2049 3.00 Research Methods in Kinesiology
HH/KINE 2050 3.00 Analysis of Data in Kinesiology I
HH/KINE 2380 3.00 Introduction to Sport Administration
HH/KINE 2475 3.00 Coaching: The Art and Science
HH/KINE 2490 3.00 Athletic Therapy I

3000 Level
HH/KINE 3000 3.00 Psychology of Physical Activity and Health
HH/KINE 3012 3.00 Human Physiology II
HH/KINE 3020 3.00 Skilled Performance and Motor Learning
HH/KINE 3030 3.00 Biomechanics of Human Movement
HH/KINE 3100 3.00 Health Psychology and Kinesiology
HH/KINE 3150 3.00 Analysis of Data in Kinesiology II
HH/KINE 3240 3.00 Behavioural Approach to Administration of Fitness and Sport
HH/KINE 3340 3.00 Growth, Maturation and Physical Activity
HH/KINE 3350 3.00 Physical Activity, Health and Aging
HH/KINE 3360 3.00 Gender and Sexuality in Sport and Health
HH/KINE 3400 3.00 Fitness Consulting and Personal Fitness Training
HH/KINE 3420 3.00 Cultural Studies of Sport, Leisure and Health
HH/KINE 3430 3.00 Canadian Culture and Physical Activity

4000 Level
HH/KINE 3440 3.00 Olympic Games: Heroes and Villains at Play
HH/KINE 3450 3.00 Athletic Injuries
HH/KINE 3460 3.00 Regional Human Anatomy I
HH/KINE 3465 3.00 Regional Human Anatomy II
HH/KINE 3480 3.00 Outdoor and Experiential Education
HH/KINE 3490 3.00 Politics and Policy in the Sport Industry
HH/KINE 3510 3.00 Sport Marketing and Event Management
HH/KINE 3530 3.00 Theories of Play
HH/KINE 3570 3.00 Theory and Methodology of Training
HH/KINE 3575 3.00 Athletic Injuries - Extremities
HH/KINE 3580 3.00 Coaching: The Strategy and Tactics of Sport
HH/KINE 3600 3.00 Athletic Therapy II
HH/KINE 3610 3.00 Coaching: Psychological and Sociological Aspects
HH/KINE 3620 3.00 Sociology of Sport I
HH/KINE 3635 3.00 Fundamentals of Epidemiology
HH/KINE 3640 3.00 Epidemiology of Physical Activity, Fitness and Health
HH/KINE 3645 3.00 Physical Activity and Health Promotion
HH/KINE 3650 3.00 Functional Neuroanatomy
HH/KINE 3670 3.00 Molecular and Cellular Neuroscience with Applications to Health
HH/KINE 3710 3.00 Immune System in Health and Disease
HH/KINE 4010 3.00 Exercise Physiology
HH/KINE 4020 3.00 Human Nutrition
HH/KINE 4060 3.00 Independent Studies in Kinesiology & Health Science
HH/KINE 4100 6.00 Honours Thesis
HH/KINE 4120 3.00 Nutritional Aids in Sport and Exercise
HH/KINE 4130 3.00 Advanced Human Nutrition
HH/KINE 4140 3.00 Nutrition and Human Diseases
HH/KINE 4210 3.00 Disorders of Visual Cognition
HH/KINE 4220 3.00 Human Motor Control and Learning
HH/KINE 4230 3.00 Neuronal Development for Activity and Health
HH/KINE 4240 3.00 Applied Human Factors
HH/KINE 4250 3.00 Physical Activity and Cognition
HH/KINE 4340 3.00 Sport, "Race" and Popular Culture in Canada
HH/KINE 4370 3.00 Body as Light: Meditation Practices
HH/KINE 4375 3.00 Body as Weapon: Martial Arts/Combat Training
HH/KINE 4400 6.00 Advanced Fitness/Lifestyle Assessment and Counselling
HH/KINE 4410 3.00 Obesity: Assessment, Treatment and Implications
HH/KINE 4420 3.00 Relaxation: Theory and Practice
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<td>HH/KINE 4440 3.00</td>
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Academic Course Descriptions

1000 Level

HH/KINE 1000 6.00 Sociocultural Perspectives in Kinesiology

HH/KINE 1020 6.00 Fitness and Health
An examination of the components and principles of fitness and health with particular attention to the evaluation and modification of fitness and health status. Course credit exclusions: AS/SC/KINE 1020 3.00 (prior to Fall/Winter 1998-1999), AS/SC/KINE 1020 4.00 (prior to Fall/Winter 2003-2004), AS/SC/KINE 1020 5.00 (prior to Fall/Winter 2006-2007), AS/SC/PHED 1020 3.00 (prior to Fall/Winter 1996-1997).

2000 Level

HH/KINE 2011 3.00 Human Physiology I
The focus of this course is the cellular basis of human physiology. Basic principles of physiology are presented from the viewpoint of the simplest structural unit-the cell-in order to provide a sound basis for understanding complex multi-cellular organisms in subsequent courses. Course credit exclusions: AS/HH/SC/KINE 3011 3.00.

HH/KINE 2031 3.00 Human Anatomy
An overview of the organization and structure of the human body. Each of the following systems is examined with respect to cell morphology, cell and tissue arrangement and inter-systems organization: skeletal, muscular, nervous, circulatory, lymphatic, respiratory, urinary, reproductive and endocrine. Course credit exclusions: AS/SC/KINE 3070 3.00 (prior to Fall/Winter 1997-1998), AS/SC/PHED 2070 3.00 (prior to Fall/Winter 1996-1997), SC/PHED 2070 4.00 (prior to Fall/Winter 1996-1997), AS/PHED 3070 3.00 (prior to Fall/Winter 1996-1997), SC/PHED 3070 4.00 (prior to Fall/Winter 1996-1997), SC/NATS 1650 6.00.

HH/KINE 2049 3.00 Research Methods in Kinesiology
This course introduces students to the procedures utilized to design and conduct research in the discipline of kinesiology. Course credit exclusions: AS/SC/KINE 2049 4.00 (prior to Fall/Winter 2004-2005), AK/AS/HH/SC/PSYC 2030 3.00, AK/HH/PSYC 2530 3.00.

HH/KINE 2050 3.00 Analysis of Data in Kinesiology I

HH/KINE 2380 3.00 Introduction to Sport Administration
This course is designed to introduce students to the knowledge and skills needed to be successful in sport management. Topics include leadership styles, communication and change management skills, creative problem-solving and an introduction to event management and marketing. Course credit exclusions: None. Note: This course does not count for science credit.

HH/KINE 2475 3.00 Coaching: The Art and Science
This course introduces the fundamental principles involved in the coaching process. Background and philosophic issues related to the coach and the athlete are explored. Course credit exclusions: None. Note: Upon successful completion of this course, students receive Level I Theory certification of the National Coaching Certificate Program.

HH/KINE 2490 3.00 Athletic Therapy I
The purpose of the course is to provide students with a broad spectrum of knowledge relating to the physiological, psychosocial and pathological aspects of participation in sport with an emphasis on the management factors in injury prevention and remediation. Prerequisite or corequisite: AS/HH/SC/KINE 2031 3.00. Course credit exclusions: AS/SC/PHED 2490 3.00 (prior to Fall/Winter 1996-1997).
3000 Level

HH/KINE 3000 3.00 Psychology of Physical Activity and Health
An overview of the theoretical frameworks and psychological principles related to physical activity, exercise and sport. Prerequisites: AS/HH/SC/KINE 1000 6.00; AS/HH/SC/KINE 1020 6.00; AS/HH/SC/KINE 2049 3.00; AS/SC/PSYC 1010 6.00. Course credit exclusions: AS/SC/KINE 2000 3.00 (prior to Fall/Winter 2007-2008).

HH/KINE 3012 3.00 Human Physiology II
The principles of homeostasis and physiological regulation are studied in relation to the cardiorespiratory, renal, locomotor, reproductive and digestive systems. Laboratory work is an essential part of the course. Prerequisite: AS/HH/SC/KINE 2011 3.00 or AS/HH/SC/KINE 3011 3.00. Introductory biology or life science is highly recommended. Course credit exclusions: AS/SC/KINE 3070 3.00 (prior to Fall/Winter 1997-1998), AS/SC/PHED 2070 3.00 (prior to Fall/Winter 1996-1997), SC/PHED 2070 4.00 (prior to Fall/Winter 1996-1997), AS/SC/PHED 3010 3.00 (prior to Fall/Winter 1996-1997), SC/PHED 3010 4.00 (prior to Fall/Winter 1996-1997), AS/PHED 3070 3.00 (prior to Fall/Winter 1996-1997), SC/PHED 3070 4.00 (prior to Fall/Winter 1996-1997).

HH/KINE 3020 3.00 Skilled Performance and Motor Learning

HH/KINE 3030 3.00 Biomechanics of Human Movement
Human movement is investigated with particular reference to the laws of physics (mechanics) and anatomical concepts as applied to joint motion and muscular action. Application of biomechanics to sports skills execution and laboratory exposure to contemporary analysis are included. Prerequisite: HH/KINE 2031 3.00. Course credit exclusions: AS/SC/PHED 3030 3.00 (prior to Fall/Winter 1996-1997).

HH/KINE 3100 3.00 Health Psychology and Kinesiology
This course provides an overview of primary topics in health psychology, emphasizing both psychological research approaches specific to physical activity and its application to behaviours related to eating and weight, pain, cancer and related diseases. Prerequisites for this course: AK/AS/HH/SC/PSYC 1010 6.00. Course credit exclusions: AK/AS/HH/SC/PSYC 3170 3.00.

HH/KINE 3150 3.00 Analysis of Data in Kinesiology II
This intermediate course in inferential statistics includes t-tests, multiple regression, ANOVA and selected non-parametric statistics. Practical applications to research in kinesiology and health science are emphasized. Prerequisite: AS/HH/SC/KINE 2050 3.00. Course credit exclusions: AK/ADMS 3320 3.00 (prior to Fall/Winter 2005-2006), AK/MATH 2720 3.00, ES/ENVS 2010 6.00, AS/SC/MATH 1132 3.00, AK/AS/SC/MATH 2500 3.00, AK/AS/SC/MATH 2570 3.00, AS/POLS 3300 6.00.

HH/KINE 3240 3.00 Behavioural Approach to Administration of Fitness and Sport
The focus of this course is on working with people. Students learn the theory and practice of team building, communication and counselling skills. Course credit exclusions: AS/PHED 2420 3.00 (prior to Fall/Winter 1996-1997). Note: This course does not count for science credit.

HH/KINE 3340 3.00 Growth, Maturation and Physical Activity
The major purpose of this course is to examine and discuss the literature and research studies in those aspects of physical growth and development that directly concern educators. Individual differences in growth and development are stressed throughout. Course credit exclusions: AS/SC/PHED 3340 3.00 (prior to Fall/Winter 1996-1997).

HH/KINE 3350 3.00 Physical Activity, Health and Aging
The course examines the aging process, lifestyle changes and the effect of physical activity on the health of aging adults. Prerequisites: AS/HH/SC/KINE 1020 6.00; AS/HH/SC/KINE 2020 3.00. Note: Internet use is required for this course. Course credit exclusions: None.

HH/KINE 3360 3.00 Gender and Sexuality in Sport and Health
The course introduces students to the social production of gender (including femininity and masculinity) and sexuality and how it impacts the worlds of sport and health. The course introduces students to feminist and queer theory approaches within the discipline. Prerequisite: HH/KINE 1000 6.00. Course credit exclusions: HH/KINE 4350 3.00; HH/KINE 4360 3.00. Note: This course does not count for science credit.

HH/KINE 3400 3.00 Fitness Consulting and Personal Fitness Training
This course provides detailed theoretical and practical instruction on physical activity/exercise prescription, management, and supervision and intervention
strategies with a focus on health-related fitness outcomes. Prerequisites: AS/HH/SC/KINE 1020 6.00; AS/HH/SC/KINE 2031 3.00; AS/HH/SC/KINE 3011 3.00. Corequisite: AS/HH/SC/KINE 3012 3.00; AS/HH/SC/KINE 3030 3.00. Course credit exclusions: None.

HH/KINE 3420 3.00 Cultural Studies of Sport, Leisure and Health
This course offers students an opportunity to examine key concepts in cultural studies, such as representation, media, identity and hegemony as they relate to sport, leisure and health. The course adopts a multi-method approach. Prerequisite: HH/KINE 1000 6.00. Course credit exclusions: None. Note: This course does not count for science credit.

HH/KINE 3430 3.00 Canadian Culture and Physical Activity
This course examines how Canadian physical activity and health has been organized since Confederation and the processes by which people have fashioned sport and health within economic, social, and political struggles and changes. The course focuses upon the history of Canadian sports, physical education, physical fitness and recreation. Course credit exclusions: AS/PHED 3430 3.00 (prior to Fall/Winter 1996-1997). Note: This course does not count for science credit.

HH/KINE 3440 3.00 Olympic Games: Heroes and Villains at Play
A comparative analysis of recent developments and characteristics of physical education and sports in representative nations and world regions. The course covers objectives, methods, personnel and facilities in physical education and evaluation of selected national sports programs. Course credit exclusions: AS/PHED 3440 3.00 (prior to Fall/Winter 1996-1997). Note: This course does not count for science credit.

HH/KINE 3450 3.00 Athletic Injuries
An introductory examination of prevention, recognition and treatment of common athletic injuries. Follow-up remedial procedures and therapeutic modalities to enhance healing are also studied. Prerequisite: HH/KINE 2031 3.00. Course credit exclusions: AS/SC/PHED 3450 3.00 (prior to Fall/Winter 1996-1997).

HH/KINE 3460 3.00 Regional Human Anatomy I
A comprehensive study of the structures of the human body. This course includes an examination of the upper limb, lower limb and back. Prerequisite: AS/HH/SC/KINE 2031 3.00. Course credit exclusions: AS/SC/PHED 3460 3.00 (prior to Fall/Winter 1996-1997).

HH/KINE 3465 3.00 Regional Human Anatomy II
This course examines, in detail, the anatomical regions of the head, neck, back and thorax. Prerequisite: AS/HH/SC/KINE 2031 3.00. Course credit exclusions: AS/SC/KINE 3050C 3.00 (prior to Fall/Winter 1998-1999).

HH/KINE 3480 3.00 Outdoor and Experiential Education
This course introduces fundamental principles and practices of outdoor and experiential education. Current theories, issues, trends and practices are discussed and the objectives of a range of outdoor programs are considered. Course credit exclusions: AS/SC/PHED 3480 3.00 (prior to Fall/Winter 1996-1997).

HH/KINE 3490 3.00 Politics and Policy in the Sport Industry
Discussions about power, politics and ethics as they relate to current sport policy issues are explored. Policy development and policy analysis skills are learned and applied to issues in professional sport, amateur sport and university athletics. Course credit exclusions: AS/PHED 3490 3.00 (prior to Fall/Winter 1996-1997). Note: This course does not count for science credit.

HH/KINE 3510 3.00 Sport Marketing and Event Management
The purpose of this course is to provide students with both the theory and practical skills required to organize and manage events. Additionally, students have the opportunity to learn from professionals working in this field. Course credit exclusions: AS/PHED 3510 3.00 (prior to Fall/Winter 1996-1997). Note: This course does not count for science credit.

HH/KINE 3530 3.00 Theories of Play
A critical analysis of definitions, concepts, philosophies and assumptions of classical, recent and modern theories of play with implications for macro and micro programming and planning for play service systems. Prerequisite: A 1000-level Social Science course. Course credit exclusions: AS/PHED 3530 3.00 (prior to Summer 1996). Note: This course does not count for science credit.

HH/KINE 3570 3.00 Theory and Methodology of Training
The course provides an examination of the scientific and methodological theories, techniques and planning methods utilized in the training of the skilled athlete, with practical application to selected sports. Prerequisites: AS/HH/SC/KINE 1000 6.00; AS/HH/SC/KINE 1020 6.00. Course credit exclusions: AS/PHED 3570 3.00 (prior to Fall/Winter 1996-1997).

HH/KINE 3575 3.00 Athletic Injuries - Extremities
This course is an introduction to athletic injuries including injury classification, basic level assessment of the extremities, tissue healing, protective equipment, basic treatment, and common injuries to the extremities. Prerequisite/Corequisite: AS/HH/SC KINE 2031 3.00. Course credit exclusions: AS/HH/SC KINE 3450 3.00.
HH/KINE 3580 3.00 Coaching: The Strategy and Tactics of Sport
This course investigates the conceptual basis of strategic and tactical planning for sports performance. An emphasis is placed on analyzing the variety of sources that contribute to the conceptual framework a coach may use in formulating strategic and tactical plans. Prerequisites or corequisites: AS/HH/SC/KINE 2475 3.00. Course credit exclusions: None. Note: This course does not count for science credit.

HH/KINE 3600 3.00 Athletic Therapy II
This course provides students with a broad spectrum of knowledge relating to the physiological and pathological aspects of participation in sport with an emphasis on detection and human factors in injury prevention and remediation. Prerequisite: AS/HH/SC/KINE 2490 3.00. Course credit exclusions: AS/SC/PHED 3600 3.00 (prior to Fall/Winter 1996-1997).

HH/KINE 3610 3.00 Coaching: Psychological and Sociological Aspects
The course focuses upon the application of principles of psychology to coaching. An examination of philosophy of coaching, legal liability, socialization and team dynamics is also undertaken with a view to establishing effective coaching methodology. Prerequisites: AS/HH/SC/KINE 2475 3.00; AS/HH/SC/PSYC 1010 6.00. Course credit exclusions: AS/SC/PHED 2470 6.00 (prior to Fall/Winter 1996-1997), AS/SC/PHED 3610 3.00 (prior to Fall/Winter 1996-1997).

HH/KINE 3620 3.00 Sociology of Sport I
Sociological analysis of sport in contemporary society with particular emphasis on issues relating to children, gender and the Canadian scene. Course credit exclusions: AS/SC/PHED 3620 3.00 (prior to Fall/Winter 1996-1997), AP/SOCI 3670 3.00. Note: This course does not count for science credit.

HH/KINE 3635 3.00 Fundamentals of Epidemiology
The course provides an introduction to the basic principles of Epidemiology with emphasis on studies undertaken in the field of kinesiology. Topics include: understanding of different study designs, analytic methods used, validity, outbreak investigation, diagnostic tests and causation. Prerequisite: AS/HH/SC/KINE 2050 3.00. Course credit exclusions: None.

HH/KINE 3640 3.00 Epidemiology of Physical Activity, Fitness and Health
This course provides an in-depth assessment of the epidemiology of physical activity, fitness and health. General concepts of epidemiology are covered, as well as associations among activity, exercise, fitness and disease/risk factors. Prerequisite: AS/HH/SC/KINE 2020 3.00. Course credit exclusions: AS/SC/KINE 3050B 3.00 (prior to Fall/Winter 1998-1999).

HH/KINE 3645 3.00 Physical Activity and Health Promotion
This course explores the Canadian context of health promotion and physical activity with a specific emphasis on health communication, "best practices" in programming for communities, workplaces, schools and health care settings, and the development of public policy. Prerequisites: AS/HH/SC/KINE 1020 6.00. Course credit exclusions: None.

HH/KINE 3650 3.00 Functional Neuroanatomy
This course investigates the anatomy of the central nervous system, additionally discussing the clinical functional relevance of each area. Prerequisite: HH/KINE 2031 3.00 or SC/BIOL 4370 3.00 or HH/PSYC 3250 3.00. Course credit exclusions: None.

HH/KINE 3670 3.00 Molecular and Cellular Neuroscience with Applications to Health
The course covers the basic principles of molecular and cellular neuroscience. The course introduces students to the most basic fundamentals of neuroscience, which is the study of the functional properties of the nervous system and relationship between brain and disease. Topics covered range from neuronal structure and function, communication at the synapse and neuromuscular junction, membrane receptors, synaptic transmission, neurotransmitters to the intra- and intercellular signaling systems within the sensory, motor and memory systems. This course provides the background for higher-level courses that deal with more specialized topics in neuroscience and the neurobiology of disease. Prerequisite: HH/KINE 3012 3.00. Course credit exclusions: HH/KINE 4512 3.00 (prior to Summer 2009).

HH/KINE 3710 3.00 Immune System in Health and Disease
The immune system in health and disease is designed to provide students with an overview of the immune system including innate and adaptive immunity. The emphasis is on normal immune function and on human diseases with immune origin or immune components particularly diseases where motion is limited by disease such as the arthritises. Prerequisite: HH/KINE 2011 3.00; HH/KINE 3012 3.00. Course credit exclusions: None. Note: May not be taken for credit by Biology or Biochemistry majors.

4000 Level

HH/KINE 4010 3.00 Exercise Physiology
The study of the physiological mechanisms involved during physical activity. The course covers the physiological effects of exercise and training upon the neuromuscular, cardiovascular, respiratory and metabolic systems. Prerequisites: AS/HH/SC/KINE 3011 3.00; AS/HH/SC/KINE 3012 3.00. Course credit exclusions: None.
HH/KINE 4020 3.00 Human Nutrition
Basic energy and regulatory nutrients are examined, followed by an applied nutrition section in weight control, eating disorders, sport nutrition, food as drugs and food safety. Metabolic interrelationships and health associations are applied throughout. Prerequisite: AS/HH/SC/KINE 4010 3.00. Course credit exclusions: None.

HH/KINE 4060 3.00 or 6.00 Independent Studies in Kinesiology and Health Science
Students undertake a research project under the supervision of a faculty member. This should include a library investigation, and may include laboratory and/or field investigations. A substantial paper, a poster presentation and an oral presentation are part of the course requirements. Prerequisite: Normally only available to students after completion of 84 credits. Course credit exclusions: None. Note: Some independent study topics may not be eligible for science credit. Students should consult the School of Kinesiology and Health Science for application.

Application Deadlines:
For Summer 2011 – April 1
For Fall 2011 – August 1
For Winter 2012 – December 1

HH/KINE 4100 6.00 Honours Thesis
Students complete a thesis involving empirical research. Students arrange for supervision by a faculty member in the School of Kinesiology and Health Science. Contact the Undergraduate Office for details and application form. Prerequisites: Permission of the School of Kinesiology and Health Science; students must be in a Specialized Honours Program in Kinesiology and Health Science and have completed 84 credits. Note: Some Honours thesis topics may not be eligible for science credit.

Application Deadlines:
For Summer 2011 – April 1
For Fall 2011 – August 1
For Winter 2012 – December 1

HH/KINE 4120 3.00 Nutritional Aids in Sport and Exercise
This course investigates the influence of nutritional supplements/aids on exercise performance, with emphasis on the underlying physiologic and biochemical mechanisms behind the effectiveness of ergogenic compounds. Prerequisite: AS/HH/SC KINE 4010 3.00, AS/HH/SC KINE 4020 3.00. Course credit exclusions: None.

HH/KINE 4130 3.00 Advanced Human Nutrition
This course is designed to provide a detailed analysis of the metabolic, biochemical and physiological processes that occur under health, exercise, altered nutritional status, and disease states. This is an advanced nutrition course that builds on the basic nutrition information acquired in HH/KINE 4020 3.00. It is designed to provide an in depth analysis of the pathways that integrate the metabolism of carbohydrates, protein and fat. It also investigates the role of nutrition in the development and exacerbation of chronic diseases, and under different exercise states. It is targeted towards students interested in nutrition/physiology-related careers. Prerequisite: HH/KINE 4010 3.00; HH/KINE 4020 3.00. Course credit exclusions: None.

HH/KINE 4140 3.00 Nutrition and Human Diseases
This course discusses nutrition as it affects muscle and human health. It discusses: nutrition and the immune system; nutrition and aging; ethnic nutrition and health; nutrition and the health of skeletal muscle; food and drug interaction; and nutrition in the treatment and prevention of selected human diseases including myopathies, cancer, cardiovascular disease, osteoporosis, and diabetes. Prerequisite: HH/KINE 4020 3.00. Course credit exclusions: None.

HH/KINE 4210 3.00 Disorders of Visual Cognition
Humans rely heavily on vision to interact with the world. This course investigates the clinical disorders that are manifested with impairments in different stages of visual processing. Prerequisite: HH/KINE 3020 3.00 or SC/Biol 4370 3.00 or HH/PSYC 3250 3.00. Course credit exclusions: None.

HH/KINE 4220 3.00 Human Motor Control and Learning
This course deals with concepts of how the brain learns and controls voluntary movement, particularly those of the upper limbs. Prerequisites: AS/HH/SC/KINE 3020 3.00. Course credit exclusions: None.

HH/KINE 4230 3.00 Neuronal Development for Activity and Health
Analyzes the cellular, molecular and physiological processes underlying neuronal and neuromuscular development in health and disease. Prerequisite: HH/KINE 3012 3.00. Course credit exclusions: None.

HH/KINE 4240 3.00 Applied Human Factors
This course discusses human factors, e.g. sensory, perceptual, motor and cognitive systems, and how they feature in machines, systems design, procedures and skills, with an emphasis on physical activities and sport. Prerequisite: HH/KINE 3020 3.00 or SC/Biol 4370 3.00 or HH/PSYC 3250 3.00. Course credit exclusions: None.

HH/KINE 4250 3.00 Physical Activity and Cognition
This course examines the effects of engaging in physical activity on cognitive systems such as attention, learning, and memory. Both normal healthy and disease states will be discussed. Prerequisite: HH/KINE 3020 3.00 or SC/Biol 4370 3.00 or HH/PSYC 3250 3.00. Course credit exclusions: None.
HH/KINE 4340 3.00 Sport, "Race" and Popular Culture in Canada
The course gives students a historical and contemporary understanding of 'race' and racism in Canadian popular culture as it pertains to the world of sport. Prerequisite: AS/HH/SC/KINE 1000 6.00. Course credit exclusions: AS/KINE 3630 3.00 (prior to Fall/Winter 2005-2006). Note: This course does not count for science credit.

HH/KINE 4370 3.00 Body as Light: Meditation Practices
Cross-cultural survey of training for enlightenment through meditation techniques, posture practices, and spiritual traditions. From prehistoric times our ancestors used repetitive physical activities to explore altered states of consciousness and to purify or illuminate the body/mind harmony as optimal health. Prerequisite: HH/KINE 1000 6.00. Course credit exclusions: None. Note: This course does not count for science credit.

HH/KINE 4375 3.00 Body as Weapon: Martial Arts/Combat Training
Cross-cultural survey of training for combat in military units, martial arts, and self defense. Fighting and war stand as two ancient yet enduring activities evoking study and systematic practice of lethal methods for using the body as a weapon against antagonists. Prerequisite: HH/KINE 1000 6.00. Course credit exclusions: None. Note: This course does not count for science credit.

HH/KINE 4400 6.00 Advanced Fitness/Lifestyle Assessment and Counselling
Students receive supervised, practical experience in designing, administering and interpreting fitness assessments along with the follow-up exercise counselling for athletes and the general public. Prerequisites: AS/HH/SC/KINE 3400 3.00; permission of the course director. Open only to students in the Certificate in Fitness Assessment and Exercise Counselling. Prerequisite or corequisite: AS/HH/SC/KINE 4010 3.00. Course credit exclusions: None.

HH/KINE 4410 3.00 Obesity: Assessment, Treatment and Implications
Obesity is a very prevalent condition that has received considerable attention. However, the attention has been very one sided, wherein only the benefits of weight loss are emphasized. The difficulties associated with maintaining weight loss are very poorly understood, and the dangers or negative aspects of focusing on weight per se may be more detrimental than the obesity itself. Prerequisites: HH/KINE 1020 6.00. Course Credit Exclusions: None.

HH/KINE 4420 3.00 Relaxation: Theory and Practice
This course focuses on an understanding of the physiological and psychological basis of relaxation as a self-management procedure and in the utilization of relaxation strategies in sport, health and physical activity. Prerequisites: AS/HH/SC/KINE 2031 3.00; AS/HH/SC/KINE 3011 3.00; AS/HH/SC/KINE 3012 3.00 or permission of the course director. Note: This course does not count for science credit.

HH/KINE 4421 3.00 Relaxation II: Research and Application
This course reviews the research and application of self-regulation strategies (relaxation, biofeedback, imagery, cognitive restructuring and attention control) for performance and health enhancement. Prerequisite: AS/HH/KINE 4420 3.00. Course credit exclusions: None.

HH/KINE 4430 3.00 Business Skills for Sport and Fitness Professionals
This course includes theory and detailed practical instruction about key management/organizational processes and their successful application to sport and fitness-related business initiatives. Course credit exclusions: AS/HH/KINE 3250 3.00. Note: This course does not count for science credit.

HH/KINE 4440 3.00 Advanced Exercise Physiology: Muscle
Advanced topics in exercise physiology and biochemistry, including energy metabolism, fatigue, skeletal muscle physiology, adaptations to exercise and training. Applications of exercise to disease states, animal laboratories, and discussions of original research articles in exercise physiology. Prerequisite: AS/HH/SC/KINE 4010 3.00. Course credit exclusions: None.

HH/KINE 4445 3.00 Physiological Basis of Fatigue
An in-depth examination of the physiological processes that limit muscular exercise. Topics include cellular and metabolic failure in sustained muscular contractions, central nervous system limitations, substrate depletion and product accumulation, body fluid shifts and adaptations that forestall fatigue. Prerequisites: AS/HH/SC/KINE 3011 3.00; AS/HH/SC/KINE 3012 3.00; AS/HH/SC/KINE 4010 3.00. Course credit exclusions: None.

HH/KINE 4448 3.00 Advanced Human Physiology: Endocrinology
An overview of human endocrinology at the physiological, biochemical and molecular levels, with an emphasis on health, disease, exercise and adaptation. Prerequisite: HH/KINE 4010 3.00. Course credit exclusions: SC/BIOL 4320 3.00.

HH/KINE 4450 3.00 Advanced Exercise Physiology: Cardiovascular
An overview of the cardiovascular physiology of exercise at both the central (heart) and peripheral (blood vessels, capillaries) levels, with an emphasis on health, disease, exercise and adaptation. Physiology adaptations at the molecular level are
emphasized. Prerequisite: AS/HH/SC/KINE 4010 3.00. Course credit exclusions: None.

HH/KINE 4453 3.00 Vascular Function in Health and Disease
This course will provide an in depth study of the physiology of the vascular system. These concepts then will be applied to understanding the pathophysiology of the vascular system in situations of chronic inflammation and diseases such as atherosclerosis and hypertension. The beneficial effects of exercise on the vascular system will be discussed. Prerequisite: HH/KINE 4010 3.00.

HH/KINE 4455 3.00 Movement Analysis Laboratory
This course focuses on the theory and practice of methods for analyzing the mechanics and control of movement. Methods include collection and analysis of biological signals such as electromyography and evoked potentials, as well as techniques for both kinematic and kinetic analysis of movement. Prerequisites: HH/KINE 3020 3.00, HH/KINE 3030 3.00. Course credit exclusions: None.

HH/KINE 4460 3.00 Occupational Biomechanics
Use of biomechanics in the occupational setting is introduced. Topics include workplace assessment techniques, injury mechanisms, tissue mechanics and the (re)design of tools and workplace. Specific disorders and issues involving the upper extremity and lower back are addressed. Prerequisite: AS/HH/SC/KINE 3030 3.00. Course credit exclusions: None.

HH/KINE 4470 3.00 Muscle and Joint Biomechanics
Quantitative biomechanical principles are used to evaluate the production of human motion at the joint and muscle level. Factors affecting total joint moment of force are studied including muscle mechanics, muscle architecture, moment arm and electrophysiology. Prerequisite: AS/HH/SC/KINE 3030 3.00. Course credit exclusions: AS/SC/KINE 3470 3.00 (prior to Fall/Winter 2003-2004).

HH/KINE 4475 3.00 Clinical Biomechanics
Quantitative biomechanical techniques are used to evaluate musculoskeletal injuries and pathological movement. Standard biomechanics techniques and modelling methods are combined with an understanding of tissue mechanics to quantitatively evaluate injury mechanisms and rehabilitation of tissues (bone, ligament, tendon, muscle). Prerequisite: AS/HH/SC/KINE 3030 3.00. Recommended: AS/HH/SC/KINE 3470 3.00. Course credit exclusions: None.

HH/KINE 4480 3.00 Sociology of Sport II
This course focuses on social problems in sport. Topics include inequality, sport as work, sport as a spectacle, and sport and the state. Prerequisite: AS/HH/KINE 3620 3.00 or permission of the course director. Course credit exclusions: None. Note: This course does not count for science credit.

HH/KINE 4485 3.00 Social Determinants of Physical Activity and Health in Canada
This course is an introduction to the dynamic interplay of economic, political and social forces within which sport and physical activity have been developed, elaborated and contested in Canada. Prerequisite: AS/HH/SC KINE 1000 6.00. Course credit exclusions: None. Note: This course does not count for science credit.

HH/KINE 4490 3.00 Philosophical Issues in Kinesiology and Health Science
This course examines the philosophical foundations of kinesiology and health science; their manifestation and influences on the development of physical activity, physical education and sport programs; identification and critical analysis of current issues in these programs in modern society. Prerequisite: AS/HH/SC/KINE 1000 6.00. Course credit exclusions: None. Note: This course does not count for science credit.

HH/KINE 4495 3.00 Doctors, Trainers and Drugs: The Socio-Cultural Study of Sports and Medicine
Introduces students to the sociological, cultural and historical study of sports medicine. This includes an exploration of the relationships between exercise sciences and sports medicine, the social organization of sports medicine, as well as a sociological analysis of drugs in sport. Prerequisites: HH/KINE 1000 6.00. Course Credit Exclusion: None. Note: This course does not count for science credit.

HH/KINE 4500 3.00 Neural Control of Movement
This neuroscience course reviews fundamental concepts of movement control, with an emphasis on the brain mechanisms underlying motor behaviour. Topics include walking, looking, reaching, posture and complex skill coordination. Movement control concepts will be used to understand the neural basis of symptoms associated with motor disorders such as Parkinson's disease, ataxia, Lou Gehrig's disease, muscular dystrophy, and stroke. Prerequisite: AS/HH/SC/KINE 3020 3.00 or permission of the course director. Course credit exclusions: None.

HH/KINE 4505 3.00 Neurophysiology of Movement in Health and Disease
This course provides an overview of current neurophysiological concepts in motor control, with an emphasis on the neurophysiological principles underlying human movement disorders. Prerequisite: AS/HH/SC/KINE 3011 3.00 or AS/HH/SC/KINE 3020 3.00. Course credit exclusions: AS/SC/KINE 4050M 3.00 (prior to Fall/Winter 2002-2003), AS/SC/KINE 4050A 3.00 (prior to Fall/Winter 2003-2004).
HH/KINE 4510 3.00 Cellular and Molecular Basis of Muscle Physiology
Topics include muscle development, muscle-specific gene expression, molecular basis of muscle contraction, biochemical plasticity of muscle, sarcolemmal and nuclear signal transduction in muscle. Prerequisite(s): AS/HH/SC/KINE 2011 3.00, or SC/BIOI 3060 4.00 and SC/BIOI 3070 4.00. Course credit exclusions: None.

Cross-listed to: SC/BIOI 4510 3.00

HH/KINE 4515 3.00 Stem Cells: Physiology and Therapeutic Applications
This course examines the physiology of tissue-specific stem cell populations in the context of potential therapeutic strategies used for the treatment of chronic disease states. Prerequisite: AS/HH/SC/KINE 4010 3.00. Course credit exclusions: None.

HH/KINE 4516 3.00 Mitochondria in Health and Disease
Analyzes the function and biogenesis of mitochondria with an emphasis on skeletal muscle. Apoptosis, mitochondrial disease, effects of exercise and training are examined at the molecular level. Current original literature is read and discussed in lecture and class presentation format. Prerequisites: HH/KINE 4010 3.00. Course credit exclusions: None.

HH/KINE 4518 3.00 Molecular Basis of Selected Diseases
This course is designed to provide students with an understanding of the molecular mechanisms that underlie selected diseases. Disease states included are cancer, acquired immune deficiency syndrome, Alzheimer's, bovine spongiform encephalopathy and muscular dystrophy. Prerequisites: AS/HH/SC/KINE 3011 3.00, AS/HH/SC/KINE 3012 3.00, and AS/HH/SC/KINE 4010 3.00. Course credit exclusions: None.

HH/KINE 4520 3.00 Sport Psychology Seminar
The course provides an in-depth examination of selected topics in sport psychology: motivation, imagery, self-regulation and attention. The emphasis is on the application of mental training skills in sport settings. Prerequisite: AS/HH/SC/KINE 3000 3.00. Course credit exclusions: None.

HH/KINE 4560 3.00 Physical Activity and Children: Pedagogy
This course examines teaching methods available for people working in a physical activity setting with children. Emphasis is placed on the core program components of dance, games and gymnastics. Curriculum and lesson planning for school based physical education is included. Prerequisite: HH/KINE 1020 6.00 and HH/KINE 3000 3.00. Course credit exclusions: None. Note: This course does not count for science credit.

HH/KINE 4565 3.00 Epidemiology of Injury Prevention
This course introduces students to the recognition of situations or practices that contribute to injuries, strategies for injury prevention, with an emphasis on an epidemiological/public health approach. Prerequisites: AS/HH/SC/KINE 1000 6.00; AS/HH/SC/KINE 2050 3.00. Course credit exclusions: None.

HH/KINE 4575 3.00 Athletic Injuries - Body Core
This is a course in the assessment, care and prevention of orthopaedic and neurological injuries and conditions of the head, body and spine. Also included is a review of palpations and muscle testing related to the body core. Prerequisites: AS/HH/SC/KINE 3575 3.00, AS/HH/SC/KINE 2031 3.00. Course credit exclusions: None.

HH/KINE 4580 3.00 Treatment and Rehabilitation of Sports Injuries
An advanced course in the treatment and rehabilitation of common athletic injuries including generalized body reactions to injury, specific tissue responses to trauma, the immediate treatment of injuries, the long-term rehabilitation of injuries and the use of modalities. Prerequisites: AS/HH/SC/KINE 4570 3.00; current CPR and First Aid; clinical and field experience. Open only to students in the Athletic Therapy Certificate. Course credit exclusions: None.

HH/KINE 4590 6.00 Advanced Athletic Therapy Assessment and Rehabilitation
An advanced-level course in athletic therapy applying theoretical background to sport-related injuries and rehabilitation. Prerequisites: HH/KINE 3450 3.00; HH/KINE 3460 3.00; HH/KINE 3600 3.00; HH/KINE 3575 3.00, HH/KINE 4575 3.00. Open only to students in the Athletic Therapy Certificate or with permission of the course director. Prerequisite or corequisite: HH/KINE 3600 3.00

HH/KINE 4595 3.00 Ethics for Kinesiology and Health
This course provides grounding in ethical theories and approaches, and applies ethical paradigms to issues in kinesiology and health science. Prerequisite: AS/HH/SC/KINE 1000 6.00. Course credit exclusions: None.

HH/KINE 4600 3.00 Coaching: Science and Methodology
The course focuses on coaching methodology and scientific principles applied to coaching. Methodology includes planning, conducting and evaluating training sessions, and time, stress and team management. Systems of training, scientific conditioning methods and other influences on conditioning and performance are included. Prerequisites: AS/HH/SC/KINE 2475 3.00, AS/HH/SC/KINE 3610 3.00. Note: Levels I, II and III Theory of the National Coaching Certification are granted with the successful completion of
AS/HH/SC/KINE 3610 3.00 and AS/HH/SC/KINE 4600 3.00. Course credit exclusions: None.

**HH/KINE 4620 3.00 Counselling Skills for Kinesiology and Health Science**
This course explores concepts, issues and skills related to "embedded" helping/counselling from a person-centred framework. Effective professional relationships and motivational interviewing are emphasized. Supervised skills practice is included. Relevant to persons working in health care, education and community services. Prerequisite: HH/PSYC 1010 6.00. Course credit exclusions: None. Note: This course does not count for science credit.

**HH/KINE 4640 3.00 Lifestyle and Current Health Issues**
This course explores the relationship between health knowledge, health attitudes and health actions of individuals in modern society. Decision-making processes are investigated relative to levels of growth and development and the quality of interactions in a variety of environments. Prerequisite: AS/HH/SC/KINE 2020 3.00. Course credit exclusions: None.

**HH/KINE 4645 3.00 Active Living and Ageing**
The purpose of this course is to assist students in developing insight into the physical and health needs of the elderly. Emphasis is placed upon identifying active ageing opportunities and exploring environments in which physical activity is integrated into daily living. Prerequisite: AS/HH/SC KINE 3350 3.00. Course credit exclusions: None. Note: This course does not count for science credit.

**HH/KINE 4650 3.00 Sport, Physical Activity and Youth Development**
This course explores developmental theories and psychosocial research that facilitate understanding of positive youth development through sport and physical activity. Students will be introduced to theoretical and empirical research from developmental psychology and sport psychology fields. Specific discussions and applications will focus on conditions that facilitate youths’ healthy involvement in sport and physical activity. Prerequisite: HH/KINE 3000 3.00. Course credit exclusions: None.

**HH/KINE 4660 3.00 Exercise and Addictive Behaviours**
This course examines a variety of topics in the area of exercise and health psychology with a particular emphasis on the adaptive and maladaptive aspects of exercise, as well as on issues concerning body image, food intake and eating disorders. Prerequisites: HH/PSYC 1010 6.00. HH/KINE 3000 3.00. Course credit exclusions: None.

**HH/KINE 4710 3.00 Psychology of Health and Chronic Disease**
This course explores the role of psychological variables in the development, progression and treatment of chronic diseases such as coronary heart disease, cancer and AIDS. Other critically reviewed topics include stress, substance abuse (smoking and alcohol), and injury and violence. Prerequisite: AK/AS/HH/SC/PSYC 1010 6.00. Course credit exclusions: None. Note: This course does not count for science credit.

**HH/KINE 4715 3.00 Experiential and Interprofessional Field Placement in Cardiovascular and Chronic Disease Prevention and Management**
Chronic disease prevention and management programs are comprehensive, long-term outpatient programs involving medical evaluation, prescribed exercise, risk factor modification, education, and counseling. This course prepares students with the knowledge and experience to provide evidence-based physical activity advice as well as health behaviour change education and support to chronic disease outpatients in an interprofessional setting. Prerequisites: HH/KINE 1020 6.00, HH/KINE 3400 3.00 and Basic Cardio Pulmonary Resuscitation (CPR) Certificate and Automated External Defibrillator (AED) Certificate. Corequisites: HH/KINE 4010 3.00, HH/KINE 4020 3.00. Open to: By permission of the Course Director. Note: Students must have access to personal transportation to get to and from the program each week. They must be in their last year of their undergraduate Kinesiology & Health Sciences studies with a minimum of a B+ GPA.

**HH/KINE 4720 3.00 Psychology of Heart Diseases**
This course examines the primary and secondary prevention of cardiovascular diseases from a behavioural, psychosocial and health services lens. Major emphasis is placed on cardiac rehabilitation, and individual, physician and health system determinants of referral and participation. Prerequisites: HH/KINE 1020 6.00, HH/KINE 3000 3.00. Course credit exclusions: None.

**HH/KINE 4730 3.00 Psychology of Pain**
This course provides a critical analysis of pain theory, research and management. It examines interactions of psychological, social, and physiological factors in the perception, impact, and management of acute, chronic nonmalignant, and cancer pain. Prerequisite: HH/PSYC 1010 6.00. Course credit exclusions: None. Note: An introductory Biology or Physiology course is strongly recommended.
HH/KINE 4740 3.00 Psychology of Sport Injury and Rehabilitation
This course deals with the psychosocial aspects of sport injury. Through this course, the students gain an understanding of the psychological and sociological aspects of sport injury, the impact of pain, and the psychological implications of long term rehabilitation. Psychological interventions are highlighted within case histories and a return to an active lifestyle is the goal of the interventions. Prerequisite: AK/AS/HH/SC/PSYC 1010 6.00. Course credit exclusions: None.

HH/KINE 4800 3.00 Human Cadaver Dissection
Human cadaver dissection is a laboratory course in which students dissect an anatomical region on a human cadaver. Twenty hours of supervised instruction; 40 hours of self-directed dissection.

Prerequisites: AS/HH/SC/KINE 2031 3.00; AS/HH/SC/KINE 3460 3.00; AS/HH/SC/KINE 3465 3.00. Course credit exclusions: None. Note: This course is held off-campus. Consult the Kinesiology and Health Science Program for further details.

HH/KINE 4900 3.00 Exercise Therapy for Chronic Diseases
An overview of the use of exercise and physical activity in the evaluation and treatment of a variety of chronic diseases and disabilities. Prerequisite: AS/HH/SC/KINE 4010 3.00. Course credit exclusions: AS/SC/KINE 4050E 3.00 (prior to Fall/Winter 2001-2002).