Health Sciences

Graduation Requirements

In addition to the requirements listed below, students must satisfy:

1. The University regulations (see the Academic Regulations of the University section of this Calendar).
2. The common regulations applying to all B.H.Sc. students (see the Academic Regulations for the Bachelor of Health Sciences section of this Calendar).

Students should consult with the department when planning their program and selecting courses.

Program Requirements

Students in the B.H.Sc. Honours program choose to follow one of five concentrations. The selection must take place at admission.

Health Sciences with Concentration

B.H.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)		
1. 2.0 credits in:		2.0
HLTH 1000 [0.5]	Fundamentals of Health	
HLTH 2001 [0.5]	Health Research Methods and Skills	
HLTH 2002 [0.5]	Biochemical Basis of Health and Pathology I	
HLTH 2003 [0.5]	Social Determinants of Health	
2. 1.5 credits in:		1.5
a) Project/Field Placement Stream		
0.5 credit from:		
HLTH 3901 [0.5]	Emerging Issues in Biomedical Science	
HLTH 3902 [0.5]	Emerging Issues in Global Health	
HLTH 3903 [0.5]	Emerging Issues in Environment and Health	
HLTH 3904 [0.5]	Emerging Issues in Health Throughout the Lifespan	
HLTH 3905 [0.5]	Emerging Issues in Disabilities and Chronic Illness	
and		
1.0 credit from:		
HLTH 4907 [1.0]	Capstone Course – Group Research Project	
HLTH 4908 [1.0]	Capstone Course – Individual Research Project	
HLTH 4909 [1.0]	Capstone Course – Field Placement	
OR		
b) Essay Stream		
0.5 credit in HLTH elective at the 3000 level or above		
and		
1.0 credit in:		
HLTH 4906 [1.0]	Capstone course – Research Essay	
3. 2.5 credits in HLTH at the 3000 level or above		2.5
4. 4.0 credits in concentration electives at the 3000 level or above		4.0
B. Credits Not Included in the Major CGPA (10.0 credits)		
5. 2.5 credits in:		2.5
BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	
CHEM 1001 [0.5]	General Chemistry I	
CHEM 1002 [0.5]	General Chemistry II	
MATH 1007 [0.5]	Elementary Calculus I	
6. 1.0 credit from:		1.0
ECON 1000 [1.0]	Introduction to Economics	
PSYC 1001 [0.5]	Introduction to Psychology I	
PSYC 1002 [0.5]	Introduction to Psychology II	
7. 1.0 credit in:		1.0
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
STAT 2509 [0.5]	Introduction to Statistical Modeling II	
8. 1.0 credit in:		1.0
BIOL 2104 [0.5]	Introductory Genetics	
BIOL 2200 [0.5]	Cellular Biochemistry	
9. 0.5 credit in approved 2000-level concentration electives		0.5
10. 0.5 credit from:		0.5
PHIL 1550 [0.5]	Introduction to Ethics and Social Issues	
PHIL 2408 [0.5]	Bioethics	
11. 3.5 credits in free electives.		3.5
NOTE: The maximum allowed combined number of minors and concentrations for any student is two.		
Total Credits		**20.0**

Concentration in Biomedical Sciences (7.0 credits)

1. 0.5 credit from:		0.5
BIOL 2303 [0.5]	Microbiology	
CHEM 2800 [0.5]	Foundations for Environmental Chemistry	
FOOD 2001 [0.5]	Principles of Nutrition	
NEUR 2200 [0.5]	Biological Foundations of Behaviour	
PSYC 2301 [0.5]	Introduction to Health Psychology	
2. 3.5 credits in:		3.5
BIOL 3104 [0.5]	Molecular Genetics	
BIOL 3305 [0.5]	Human and Comparative Physiology	
or BIOL 3306 [0.5]	Human Anatomy and Physiology	
BIOL 3307 [0.5]	Advanced Human Anatomy and Physiology	
HLTH 3201 [0.5]	Epidemiology	
HLTH 3301 [0.5]	Microbiology and Virology	
HLTH 3302 [0.5]	Immunity and Immune-Related Disorders	
HLTH 3303 [0.5]	Biochemical Basis of Health and Pathology II	
3. 0.5 credit from:		0.5
HLTH 4201 [0.5]	Advanced and Quantitative Epidemiology	
HLTH 4202 [0.5]	Health Program Evaluation Tools and Methods	
4. 1.5 credit from:		1.5
BIOC 3008 [0.5]	Bioinformatics	

BIOC 4708 [0.5]	Principles of Toxicology	
HLTH 3502 [0.5]	Trauma-related Illness and Disability	
HLTH 4102 [0.5]	New Health Technologies	
HLTH 4301 [0.5]	Pandemics and Infectious Disease	
HLTH 4302 [0.5]	Inflammatory and Endocrine Factors in Diseases	
HLTH 4303 [0.5]	Pharmacotherapeutics	
NEUR 3501 [0.5]	Neurodegeneration and Aging	
5. 1.0 credit from:		1.0
BIOL 3202 [0.5]	Principles of Developmental Biology	
BIOL 3501 [0.5]	Biomechanics	
BIOL 4202 [0.5]	Mutagenesis and DNA Repair	
ECON 4460 [0.5]	Health Economics	
FOOD 3005 [0.5]	Food Microbiology	
FOOD 4201 [0.5]	Advanced Nutrition and Metabolism	
FOOD 4202 [0.5]	Micronutrients and Health	
GEOG 3206 [0.5]	Health, Environment, and Society	
HLTH 3101 [0.5]	Global Health	
HLTH 3102 [0.5]	Indigenous Health in a Global World	
HLTH 3103 [0.5]	Health Policy and Canada's Health Care System	
HLTH 3104 [0.5]	Regulatory Issues and Human Health	
HLTH 3401 [0.5]	Diseases of Childhood	
HLTH 3402 [0.5]	Diseases of Aging	
HLTH 3403 [0.5]	Gender and Health	
HLTH 3501 [0.5]	Diseases and Disabilities Related to Sensory Processes and Movement	
HLTH 4101 [0.5]	Global Health Governance	
HLTH 4401 [0.5]	Maternal and Prenatal Determinants of Health	
HLTH 4402 [0.5]	Psychosocial and Biological Mechanisms of Health	
HLTH 4501 [0.5]	Chronic Illness and Disability	
HLTH 4601 [0.5]	Environmental Pollution and Health	
HLTH 4701 [0.5]	Knowledge Translation	
HLTH 4901 [0.5]	Directed Studies in Health	
NEUR 3304 [0.5]	Hormones and Behaviour	
NEUR 3401 [0.5]	Environmental Toxins and Mental Health	
NEUR 3502 [0.5]	Neurodevelopmental Determinants of Mental Health	
Total Credits		**7.0**

Concentration in Disability and Chronic Illness (7.5 credits)

1. 0.5 credit in:		0.5
NEUR 2200 [0.5]	Biological Foundations of Behaviour	
2. 0.5 credit from:		0.5
BIOL 2303 [0.5]	Microbiology	
CHEM 2800 [0.5]	Foundations for Environmental Chemistry	
FOOD 2001 [0.5]	Principles of Nutrition	
PSYC 2301 [0.5]	Introduction to Health Psychology	
3. 3.5 credits in:		3.5
BIOL 3305 [0.5]	Human and Comparative Physiology	
or BIOL 3306 [0.5]	Human Anatomy and Physiology	
BIOL 3307 [0.5]	Advanced Human Anatomy and Physiology	
HLTH 3501 [0.5]	Diseases and Disabilities Related to Sensory Processes and Movement	
HLTH 3502 [0.5]	Trauma-related Illness and Disability	
HLTH 4102 [0.5]	New Health Technologies	
HLTH 4402 [0.5]	Psychosocial and Biological Mechanisms of Health	
HLTH 4501 [0.5]	Chronic Illness and Disability	
4. 0.5 credit from:		0.5
HLTH 3201 [0.5]	Epidemiology	
HLTH 4202 [0.5]	Health Program Evaluation Tools and Methods	
5. 1.5 credits from:		1.5
BIOL 3501 [0.5]	Biomechanics	
NEUR 3501 [0.5]	Neurodegeneration and Aging	
HLTH 3103 [0.5]	Health Policy and Canada's Health Care System	
HLTH 3104 [0.5]	Regulatory Issues and Human Health	
HLTH 3302 [0.5]	Immunity and Immune-Related Disorders	
HLTH 3401 [0.5]	Diseases of Childhood	
HLTH 3402 [0.5]	Diseases of Aging	
HLTH 4302 [0.5]	Inflammatory and Endocrine Factors in Diseases	
6. 1.0 credit from:		1.0
BIOC 3008 [0.5]	Bioinformatics	
BIOC 4708 [0.5]	Principles of Toxicology	
BIOL 3104 [0.5]	Molecular Genetics	
BIOL 3202 [0.5]	Principles of Developmental Biology	
ECON 4460 [0.5]	Health Economics	
FOOD 3005 [0.5]	Food Microbiology	
FOOD 4103 [0.5]	Food Safety Risk Assessment, Communication and Management I	
FOOD 4201 [0.5]	Advanced Nutrition and Metabolism	
FOOD 4202 [0.5]	Micronutrients and Health	
GEOG 3206 [0.5]	Health, Environment, and Society	
NEUR 3304 [0.5]	Hormones and Behaviour	
NEUR 3401 [0.5]	Environmental Toxins and Mental Health	
NEUR 3502 [0.5]	Neurodevelopmental Determinants of Mental Health	
HLTH 3101 [0.5]	Global Health	
HLTH 3102 [0.5]	Indigenous Health in a Global World	
HLTH 3301 [0.5]	Microbiology and Virology	
HLTH 3303 [0.5]	Biochemical Basis of Health and Pathology II	
HLTH 3403 [0.5]	Gender and Health	
HLTH 4101 [0.5]	Global Health Governance	
HLTH 4201 [0.5]	Advanced and Quantitative Epidemiology	

HLTH 4301 [0.5]	Pandemics and Infectious Disease	
HLTH 4303 [0.5]	Pharmacotherapeutics	
HLTH 4401 [0.5]	Maternal and Prenatal Determinants of Health	
HLTH 4601 [0.5]	Environmental Pollution and Health	
HLTH 4701 [0.5]	Knowledge Translation	
HLTH 4901 [0.5]	Directed Studies in Health	
Total Credits		**7.5**

Concentration in Environment and Health (8.0 credits)

1. 1.0 credit in:		1.0
BIOL 2005 [0.5]	Human Physiology	
CHEM 2800 [0.5]	Foundations for Environmental Chemistry	
2. 0.5 credit from:		0.5
BIOL 2303 [0.5]	Microbiology	
FOOD 2001 [0.5]	Principles of Nutrition	
NEUR 2200 [0.5]	Biological Foundations of Behaviour	
PSYC 2301 [0.5]	Introduction to Health Psychology	
3. 3.5 credits in:		3.5
BIOC 4708 [0.5]	Principles of Toxicology	
CHEM 3800 [0.5]	The Chemistry of Environmental Pollutants	
HLTH 3104 [0.5]	Regulatory Issues and Human Health	
HLTH 3201 [0.5]	Epidemiology	
HLTH 3302 [0.5]	Immunity and Immune-Related Disorders	
HLTH 3303 [0.5]	Biochemical Basis of Health and Pathology II	
HLTH 4601 [0.5]	Environmental Pollution and Health	
4. 0.5 credit from:		0.5
HLTH 4201 [0.5]	Advanced and Quantitative Epidemiology	
HLTH 4202 [0.5]	Health Program Evaluation Tools and Methods	
5. 1.5 credits from:		1.5
BIOL 4202 [0.5]	Mutagenesis and DNA Repair	
CHEM 4800 [0.5]	Atmospheric Chemistry	
ECON 3804 [0.5]	Environmental Economics	
GEOG 3206 [0.5]	Health, Environment, and Society	
HLTH 3101 [0.5]	Global Health	
HLTH 3402 [0.5]	Diseases of Aging	
HLTH 4303 [0.5]	Pharmacotherapeutics	
NEUR 3401 [0.5]	Environmental Toxins and Mental Health	
6. 1.0 credit from:		1.0
BIOC 3008 [0.5]	Bioinformatics	
BIOL 3104 [0.5]	Molecular Genetics	
BIOL 3202 [0.5]	Principles of Developmental Biology	
BIOL 3305 [0.5]	Human and Comparative Physiology	
or BIOL 3306 [0.5]	Human Anatomy and Physiology	
BIOL 3307 [0.5]	Advanced Human Anatomy and Physiology	
ECON 4460 [0.5]	Health Economics	
FOOD 3005 [0.5]	Food Microbiology	
FOOD 4103 [0.5]	Food Safety Risk Assessment, Communication and Management I	
HLTH 3102 [0.5]	Indigenous Health in a Global World	
HLTH 3103 [0.5]	Health Policy and Canada's Health Care System	
HLTH 3301 [0.5]	Microbiology and Virology	
HLTH 3401 [0.5]	Diseases of Childhood	
HLTH 3403 [0.5]	Gender and Health	
HLTH 3501 [0.5]	Diseases and Disabilities Related to Sensory Processes and Movement	
HLTH 3502 [0.5]	Trauma-related Illness and Disability	
HLTH 4101 [0.5]	Global Health Governance	
HLTH 4102 [0.5]	New Health Technologies	
HLTH 4301 [0.5]	Pandemics and Infectious Disease	
HLTH 4302 [0.5]	Inflammatory and Endocrine Factors in Diseases	
HLTH 4401 [0.5]	Maternal and Prenatal Determinants of Health	
HLTH 4402 [0.5]	Psychosocial and Biological Mechanisms of Health	
HLTH 4501 [0.5]	Chronic Illness and Disability	
HLTH 4701 [0.5]	Knowledge Translation	
HLTH 4901 [0.5]	Directed Studies in Health	
Total Credits		**8.0**

Concentration in Global Health (7.5 credits)

1. 0.5 credit in:		0.5
BIOL 2005 [0.5]	Human Physiology	
2. 0.5 credit from:		0.5
BIOL 2303 [0.5]	Microbiology	
CHEM 2800 [0.5]	Foundations for Environmental Chemistry	
FOOD 2001 [0.5]	Principles of Nutrition	
NEUR 2200 [0.5]	Biological Foundations of Behaviour	
PSYC 2301 [0.5]	Introduction to Health Psychology	
3. 3.5 credits in:		3.5
HLTH 3101 [0.5]	Global Health	
HLTH 3102 [0.5]	Indigenous Health in a Global World	
HLTH 3201 [0.5]	Epidemiology	
HLTH 3301 [0.5]	Microbiology and Virology	
HLTH 4101 [0.5]	Global Health Governance	
HLTH 4301 [0.5]	Pandemics and Infectious Disease	
HLTH 4401 [0.5]	Maternal and Prenatal Determinants of Health	
4. 0.5 credit from:		0.5
HLTH 4201 [0.5]	Advanced and Quantitative Epidemiology	
HLTH 4202 [0.5]	Health Program Evaluation Tools and Methods	
5. 1.5 credit from:		1.5
GEOG 3206 [0.5]	Health, Environment, and Society	
HLTH 3103 [0.5]	Health Policy and Canada's Health Care System	
HLTH 3104 [0.5]	Regulatory Issues and Human Health	

HLTH 3303 [0.5]	Biochemical Basis of Health and Pathology II	
HLTH 3403 [0.5]	Gender and Health	
HLTH 4102 [0.5]	New Health Technologies	
HLTH 4303 [0.5]	Pharmacotherapeutics	
HLTH 4601 [0.5]	Environmental Pollution and Health	
6. 1.0 credit from:		1.0
BIOC 3008 [0.5]	Bioinformatics	
BIOC 4708 [0.5]	Principles of Toxicology	
BIOL 3305 [0.5]	Human and Comparative Physiology	
or BIOL 3306 [0.5]	Human Anatomy and Physiology	
BIOL 3307 [0.5]	Advanced Human Anatomy and Physiology	
BIOL 3104 [0.5]	Molecular Genetics	
ECON 4460 [0.5]	Health Economics	
FOOD 3005 [0.5]	Food Microbiology	
FOOD 4103 [0.5]	Food Safety Risk Assessment, Communication and Management I	
FOOD 4201 [0.5]	Advanced Nutrition and Metabolism	
FOOD 4202 [0.5]	Micronutrients and Health	
HLTH 3302 [0.5]	Immunity and Immune-Related Disorders	
HLTH 3401 [0.5]	Diseases of Childhood	
HLTH 3402 [0.5]	Diseases of Aging	
HLTH 3501 [0.5]	Diseases and Disabilities Related to Sensory Processes and Movement	
HLTH 3502 [0.5]	Trauma-related Illness and Disability	
HLTH 4302 [0.5]	Inflammatory and Endocrine Factors in Diseases	
HLTH 4402 [0.5]	Psychosocial and Biological Mechanisms of Health	
HLTH 4501 [0.5]	Chronic Illness and Disability	
HLTH 4701 [0.5]	Knowledge Translation	
HLTH 4901 [0.5]	Directed Studies in Health	
NEUR 3304 [0.5]	Hormones and Behaviour	
NEUR 3401 [0.5]	Environmental Toxins and Mental Health	
NEUR 3501 [0.5]	Neurodegeneration and Aging	
NEUR 3502 [0.5]	Neurodevelopmental Determinants of Mental Health	
Total Credits		**7.5**

Concentration in Health Throughout the Lifespan (7.5 credits)

1. 0.5 credit in:		0.5
NEUR 2200 [0.5]	Biological Foundations of Behaviour	
2. 0.5 credit from:		0.5
BIOL 2303 [0.5]	Microbiology	
CHEM 2800 [0.5]	Foundations for Environmental Chemistry	
FOOD 2001 [0.5]	Principles of Nutrition	
PSYC 2301 [0.5]	Introduction to Health Psychology	
3. 3.5 credits in:		3.5
BIOL 3305 [0.5]	Human and Comparative Physiology	
or BIOL 3306 [0.5]	Human Anatomy and Physiology	
BIOL 3307 [0.5]	Advanced Human Anatomy and Physiology	
HLTH 3201 [0.5]	Epidemiology	
HLTH 3401 [0.5]	Diseases of Childhood	
HLTH 3402 [0.5]	Diseases of Aging	
HLTH 4401 [0.5]	Maternal and Prenatal Determinants of Health	
NEUR 3304 [0.5]	Hormones and Behaviour	
4. 0.5 credit from:		0.5
HLTH 4201 [0.5]	Advanced and Quantitative Epidemiology	
HLTH 4202 [0.5]	Health Program Evaluation Tools and Methods	
5. 1.5 credits from:		1.5
HLTH 3103 [0.5]	Health Policy and Canada's Health Care System	
HLTH 3303 [0.5]	Biochemical Basis of Health and Pathology II	
HLTH 3403 [0.5]	Gender and Health	
HLTH 4302 [0.5]	Inflammatory and Endocrine Factors in Diseases	
HLTH 4402 [0.5]	Psychosocial and Biological Mechanisms of Health	
HLTH 4501 [0.5]	Chronic Illness and Disability	
NEUR 3501 [0.5]	Neurodegeneration and Aging	
NEUR 3502 [0.5]	Neurodevelopmental Determinants of Mental Health	
6. 1.0 credit from:		1.0
BIOC 3008 [0.5]	Bioinformatics	
BIOC 4708 [0.5]	Principles of Toxicology	
BIOL 3104 [0.5]	Molecular Genetics	
BIOL 3202 [0.5]	Principles of Developmental Biology	
BIOL 3501 [0.5]	Biomechanics	
ECON 4460 [0.5]	Health Economics	
FOOD 3005 [0.5]	Food Microbiology	
FOOD 4103 [0.5]	Food Safety Risk Assessment, Communication and Management I	
FOOD 4201 [0.5]	Advanced Nutrition and Metabolism	
FOOD 4202 [0.5]	Micronutrients and Health	
GEOG 3206 [0.5]	Health, Environment, and Society	
HLTH 3101 [0.5]	Global Health	
HLTH 3102 [0.5]	Indigenous Health in a Global World	
HLTH 3104 [0.5]	Regulatory Issues and Human Health	
HLTH 3301 [0.5]	Microbiology and Virology	
HLTH 3302 [0.5]	Immunity and Immune-Related Disorders	
HLTH 3501 [0.5]	Diseases and Disabilities Related to Sensory Processes and Movement	
HLTH 3502 [0.5]	Trauma-related Illness and Disability	
HLTH 4101 [0.5]	Global Health Governance	
HLTH 4102 [0.5]	New Health Technologies	
HLTH 4301 [0.5]	Pandemics and Infectious Disease	
HLTH 4303 [0.5]	Pharmacotherapeutics	
HLTH 4601 [0.5]	Environmental Pollution and Health	

HLTH 4701 [0.5]	Knowledge Translation	
HLTH 4901 [0.5]	Directed Studies in Health	
NEUR 3401 [0.5]	Environmental Toxins and Mental Health	
Total Credits		**7.5**

Health Sciences

B.H.Sc. General (15.0 credits)

A. Credits Included in the Major CGPA (6.5 credits)		
1. 2.0 credits in:		2.0
HLTH 1000 [0.5]	Fundamentals of Health	
HLTH 2001 [0.5]	Health Research Methods and Skills	
HLTH 2002 [0.5]	Biochemical Basis of Health and Pathology I	
HLTH 2003 [0.5]	Social Determinants of Health	
2. 1.0 credit in:		1.0
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
STAT 2509 [0.5]	Introduction to Statistical Modeling II	
3. 0.5 credit in:		0.5
BIOL 2005 [0.5]	Human Physiology	
4. 0.5 credit from:		0.5
BIOL 2303 [0.5]	Microbiology	
CHEM 2800 [0.5]	Foundations for Environmental Chemistry	
FOOD 2001 [0.5]	Principles of Nutrition	
NEUR 2200 [0.5]	Biological Foundations of Behaviour	
PSYC 2301 [0.5]	Introduction to Health Psychology	
5. 2.5 credits from:		2.5
HLTH 3101 [0.5]	Global Health	
or HLTH 3103 [0.5]	Health Policy and Canada's Health Care System	
HLTH 3201 [0.5]	Epidemiology	
HLTH 3301 or HLTH 3302 or HLTH 3303		
HLTH 3401 [0.5]	Diseases of Childhood	
or HLTH 3402 [0.5]	Diseases of Aging	
HLTH 3501 [0.5]	Diseases and Disabilities Related to Sensory Processes and Movement	
or HLTH 3502 [0.5]	Trauma-related Illness and Disability	
B. Credits Not Included in the Major CGPA (8.5 credits)		
6. 2.5 credits in:		2.5
BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	
CHEM 1001 [0.5]	General Chemistry I	
CHEM 1002 [0.5]	General Chemistry II	
MATH 1007 [0.5]	Elementary Calculus I	
7. 1.0 credit from:		1.0
ECON 1000 [1.0]	Introduction to Economics	
PSYC 1001 [0.5]	Introduction to Psychology I	
PSYC 1002 [0.5]	Introduction to Psychology II	
8. 0.5 credit from:		0.5
PHIL 1550 [0.5]	Introduction to Ethics and Social Issues	
PHIL 2408 [0.5]	Bioethics	
9. 4.5 credits in free electives.		4.5
Total Credits		**15.0**

Department of Health Sciences

Faculty of Science

HLTH 1000 [0.5 credit]
Fundamentals of Health
Introduction to what comprises a healthy body and mind, and what leads to illness and disease. Students will be exposed to biomedical, psychosocial, and epidemiological approaches to current issues in the field of health and a a basic of understanding of policy, and cultural/ environmental contexts.
Lectures three hours a week and seminar one hour a week.

HLTH 1001 [0.5 credit]
Principles of Health
Health and illness will be considered from an interdisciplinary perspective, including biomedical, cultural, psychosocial and environmental.
Precludes additional credit for HLTH 1000. Credit will not be given if taken concurrently with, or after, HLTH 1000.
Lecture three hours a week.

HLTH 2001 [0.5 credit]
Health Research Methods and Skills
An introduction to quantitative and qualitative methods and designs in health sciences research. Basic research skills will also be provided, including regulatory aspects of conducting research, information literacy skills, evaluating published research and other sources of evidence in the digital age.
Prerequisite(s): HLTH 1000 or HLTH 1001.
Lecture three hours a week, lab/workshop two hours a week.

HLTH 2002 [0.5 credit]
Biochemical Basis of Health and Pathology I
Introduction to the structures and properties of macromolecules that underlie the range of functions that comprise cellular processes. Topics will include the molecular and thermodynamic basis of disease and the action of therapeutics. Examples will be health related.
Prerequisite(s): HLTH 1000 or HLTH 1001, BIOL 1103 and CHEM 1002.
Lecture three hours a week, workshop two hours a week.

HLTH 2003 [0.5 credit]
Social Determinants of Health
Overview of the social determinants of health, ranging from early life experiences, poverty, social status, migration, and the physical environment. The relation between social determinants and environmental vulnerabilities, health behaviours, illness prevalence, treatment outcomes, and access to health care.
Prerequisite(s): HLTH 1000 or HLTH 1001.
Lecture three hours a week.

HLTH 3101 [0.5 credit]
Global Health
Overview of issues in global health with focus on developing countries. Key indicators and determinants of global health, implementation and evaluation of global programs, challenges of research and interventions in the developing world, and key players in addressing global health issues.
Prerequisite(s): HLTH 2003, or permission of the instructor.
Lecture and seminar, three hours per week.

HLTH 3102 [0.5 credit]
Indigenous Health in a Global World
The health conditions of Indigenous peoples in different regions of the world; social and biological factors that contribute to greater risk and poor health; strategies of Indigenous peoples to restore health to their peoples.
Prerequisite(s): HLTH 2003, or permission of the instructor.
Lecture and seminar three hours per week.

HLTH 3103 [0.5 credit]
Health Policy and Canada's Health Care System
The history of Canada's health care system. The model of financing and intergovernmental responsibilities. Current and emerging policy debates facing our health care system, and the role of scientific evidence in decision-making and policy development.
Prerequisite(s): HLTH 1000 or HLTH 1001, or permission of the instructor.
Lecture and seminar three hours per week.

HLTH 3104 [0.5 credit]
Regulatory Issues and Human Health
The general principles of health regulatory policies in Canada. The role of scientific evidence in developing legislation and regulations at different levels, including probable levels of risk, standards of evidence, cost-benefit analysis, ethical considerations, psychosocial factors influencing risk management and compliance, and evolving technologies.
Prerequisite(s): HLTH 1000 or HLTH 1001, or permission of the instructor.
Lecture and seminar three hours a week.

HLTH 3201 [0.5 credit]
Epidemiology
Basic concepts of epidemiologic study designs and measures; inferences that are fundamental to the identification of causes and prevalence of diseases. Specialized issues within epidemiology including gene-environment interactions and the clustering of specific disease phenotypes.
Prerequisite(s): HLTH 2001 and STAT 2507.
Lecture three hours a week, lab/workshop two hours a week.

HLTH 3301 [0.5 credit]
Microbiology and Virology
Introduction to the pathogenic microorganisms, including fungal, bacterial, viral and prion. Biochemical, genetic, pathological and epidemiological aspects in the human context; their interaction with host defense systems and strategies for antibiotic and vaccine development.
Prerequisite(s): HLTH 2002 or permission of instructor.
Lecture three hours a week.

HLTH 3302 [0.5 credit]
Immunity and Immune-Related Disorders
Basic processes relevant to the immune system; the relationship between immune activity and functioning as related to the development of particular pathologies, such as virally-related illness, autoimmune disorders, inflammatory illnesses, and interactions with social and economic factors that promote immune-related disturbances.
Prerequisite(s): HLTH 2002 or permission of instructor.
Lecture three hours a week.

HLTH 3303 [0.5 credit]
Biochemical Basis of Health and Pathology II
Introduction to the functional properties of macromolecules that underlie cellular and physiological processes. Examples will be health related.
Prerequisite(s): HLTH 2002.
Lecture three hours a week, lab four hours a week.

HLTH 3401 [0.5 credit]
Diseases of Childhood
Childhood diseases, including those of a psychological as well as physical nature stemming from either genetic, prenatal, or postnatal factors, and those of unknown origin. The contribution of psychosocial and economic determinants.
Prerequisite(s): HLTH 2002 and HLTH 2003 or permission of instructor.
Lecture three hours a week.

HLTH 3402 [0.5 credit]
Diseases of Aging
Aging is accompanied by increased illness related to cardiovascular, immune and neurodegenerative processes. This course assesses the fundamental mechanisms that determine these pathological conditions. Molecular mechanisms and psychosocial determinants; intervention and therapeutic strategies.
Prerequisite(s): HLTH 2002 and HLTH 2003 or permission of instructor.
Lecture three hours a week.

HLTH 3403 [0.5 credit]
Gender and Health
The role of gender on psychosocial and biological mechanisms that alter the course of disease and treatment; health issues unique to women (e.g., reproductive and maternal health); the role of gender across cultures.
Prerequisite(s): HLTH 1000 or HLTH 1001.
Lecture and seminar three hours a week.

HLTH 3501 [0.5 credit]
Diseases and Disabilities Related to Sensory Processes and Movement
Neurobiological processes related to sensation, proprioception, reflex and voluntary movement, disorders of the nervous system and sensory systems. Conditions associated with pathology related to genetic and developmental factors, accident, and aging.
Prerequisite(s): (HLTH 1001 or HLTH 1001) and (BIOL 2005 or BIOL 3305 or BIOL 3306) or permission of instructor.
Lecture three hours a week, lab/workshop two hours a week.

HLTH 3502 [0.5 credit]
Trauma-related Illness and Disability
Neurobiological and psychological factors associated with trauma and effects on behavioural functioning. Consequences of traumatic brain injury, burns, amputations, chronic severe illnesses; chronic strain encountered in workplace. Consideration of treatment and rehabilitation strategies.
Prerequisite(s): HLTH 2003 and (BIOL 2005 or BIOL 3305 or BIOL 3306) or permission of instructor.
Lecture three hours a week.

HLTH 3901 [0.5 credit]
Emerging Issues in Biomedical Science
These courses enable students to develop an understanding of the current state of research and practice in the BHSc concentrations. They provide the opportunity to bring together knowledge from other courses, and for skills development including teamwork, communication and critical thinking.
Prerequisite(s): third-year standing in the specific stream of the B.H.Sc. program appropriate to the course, a major CGPA of at least 9.0 and permission of the Department of Health Sciences. Priority will be given to students in the B.H.Sc. program.
Seminars three hours a week.

HLTH 3902 [0.5 credit]
Emerging Issues in Global Health
These courses enable students to develop an understanding of the current state of research and practice in each of the B.H.Sc. concentrations. They provide the opportunity to bring together knowledge from other courses and for skills development, including teamwork, communication and critical thinking.
Prerequisite(s): third-year standing in the specific stream of the B.H.Sc. program appropriate to the course, a major CGPA of at least 9.0 and permission of the Department of Health Sciences. Priority will be given to students in the B.H.Sc. program.
Seminars three hours a week.

HLTH 3903 [0.5 credit]
Emerging Issues in Environment and Health
These courses enable students to develop an understanding of the current state of research and practice in each of the BHSc concentrations. They provide the opportunity to bring together knowledge from other courses and for skills development, including teamwork, communication and critical thinking.
Prerequisite(s): third-year standing in the specific stream of the B.H.Sc. program appropriate to the course, a major CGPA of at least 9.0 and permission of the Department of Health Sciences. Priority will be given to students in the B.H.Sc. program.
Seminars three hours a week.

HLTH 3904 [0.5 credit]
Emerging Issues in Health Throughout the Lifespan
These courses enable students to develop an understanding of the current state of research and practice in each of the BHSc concentrations. They provide the opportunity to bring together knowledge from other courses and for skills development, including teamwork, communication and critical thinking.
Prerequisite(s): third-year standing in the specific stream of the B.H.Sc. program appropriate to the course, a major CGPA of at least 9.0 and permission of the Department of Health Sciences. Priority will be given to students in the B.H.Sc. program.
Seminars three hours a week.

HLTH 3905 [0.5 credit]
Emerging Issues in Disabilities and Chronic Illness
These courses enable students to develop an understanding of the current state of research and practice in each of the BHSc concentrations. They provide the opportunity to bring together knowledge from other courses and for skills development, including teamwork, communication and critical thinking.
Prerequisite(s): third-year standing in the specific stream of the B.H.Sc. program appropriate to the course, a major CGPA of at least 9.0 and permission of the Department of Health Sciences. Priority will be given to students in the B.H.Sc. program.
Seminars three hours a week.

HLTH 4101 [0.5 credit]
Global Health Governance
Contemporary issues and debates in global health governance and effects on health monitoring and outcomes at individual and population levels. Historical patterns of global health, its regulatory framework, principal coordinating mechanisms and emerging challenges, and implications of globalization and international trade policies.
Prerequisite(s): HLTH 3101, or permission of the instructor.
Lecture and seminar three hours per week.

HLTH 4102 [0.5 credit]
New Health Technologies
Overview of new and emerging health technologies, including medical and assistive devices, diagnostics and screening, genetics, reproduction, tissue regeneration, imaging, and health informatics. Health technology assessment methods and issues. Regulatory, ethical and social implications; considerations in the developing world.
Prerequisite(s): (HLTH 1000 or HLTH 1001) or permission of the instructor.
Lecture and seminar three hours a week.

HLTH 4201 [0.5 credit]
Advanced and Quantitative Epidemiology
Epidemiologic study designs and measures; fundamentals of statistical evaluation of epidemiologic data sets. How epidemiology can be used to inform treatment strategies, such as the use of biomarkers and behavioral indices that predict illness and treatment response.
Prerequisite(s): HLTH 3201 or permission of the instructor.
Lecture three hours a week, lab/workshop two hours a week.

HLTH 4202 [0.5 credit]
Health Program Evaluation Tools and Methods
Introduction to concepts, principles and processes of evaluating health care programs and interventions. Methodological tools including needs assessment, project management skills, use of health information management databases. Issues in communication with stakeholders, including change management and decision making.
Prerequisite(s): HLTH 2001 and STAT 2507.
Lecture and seminar three hours a week.

HLTH 4301 [0.5 credit]
Pandemics and Infectious Disease
Factors that influence disease processes, including viruses, bacteria, protozoa, fungi and infectious agents, how these agents come to have the effects that they do in a given individual, how they spread within and how to limit their spread.
Prerequisite(s): HLTH 3301 or BIOL 2303 and (HLTH 1000 or HLTH 1001).
Lecture three hours a week.

HLTH 4302 [0.5 credit]
Inflammatory and Endocrine Factors in Diseases
Inflammatory and hormonal processes and their relevance to disease states. Immune-related disorders, heart disease and stroke, metabolic syndrome, diabetes, psychiatric conditions, and neurodegenerative disorders. The contribution of psychosocial and genetic factors to diseases.
Prerequisite(s): HLTH 3302 or permission of the instructor.
Lecture three hours a week.

HLTH 4303 [0.5 credit]
Pharmacotherapeutics
The pharmaceutical system. Topics include drug discovery and development, clinical trials, pharmacology and pharmacokinetics, natural products and traditional medicines and policy aspects, including patent and generic drugs, the cost of drugs and impact on local and global access.
Prerequisite(s): HLTH 3303 or permission of the instructor.
Lecture and seminar three hours a week.

HLTH 4401 [0.5 credit]
Maternal and Prenatal Determinants of Health
The influence of prenatal events on illnesses. Stressful events, viruses, and toxins encountered during pregnancy; interactions between pre- and postnatal events; economic and psychosocial influences related to maternal care.
Prerequisite(s): HLTH 2003 and at least third-year standing in the B.H.Sc. program or permission of the instructor.
Lecture three hours a week.

HLTH 4402 [0.5 credit]
Psychosocial and Biological Mechanisms of Health
The biological mechanisms that link psychosocial factors to health outcomes. Epigenetic and genetic alterations, neuroendocrine and inflammatory processes, and changes of brain structures and regulatory systems; implications for psychosocial interventions.
Prerequisite(s): HLTH 2003 and (HLTH 3302 or NEUR 2200) or permission of the instructor.
Lecture and seminar three hours a week.

HLTH 4501 [0.5 credit]
Chronic Illness and Disability
An interdisciplinary view of disabilities related to injury or disease processes including risk factors, the trajectory of such conditions, the burden of health attributable to them, and their global distribution. Strategies for early prevention and health promotion.
Prerequisite(s): HLTH 2003 and HLTH 3103.
Lecture three hours a week.

HLTH 4601 [0.5 credit]
Environmental Pollution and Health
Introduction to environmental and occupational health; detection, assessment, management and mitigation of chemical, physical and biological hazards.
Prerequisite(s): HLTH 3104.
Lecture and seminar three hours a week.

HLTH 4701 [0.5 credit]
Knowledge Translation
The application of knowledge translation in the formulation of policy and the development of skills required to maximize the impact of scientific findings through real world programs and policies and communication skills for diverse audiences.
Prerequisite(s): fourth-year standing and permission of the Department of Health Science and permission of the instructor.
Also offered at the graduate level, with different requirements, as HLTH 5300, for which additional credit is precluded.
Seminar three hours a week.

HLTH 4901 [0.5 credit]
Directed Studies in Health
Independent or group study, open to third- and fourth-year students to explore a particular topic, in consultation with a Faculty supervisor. May include directed reading, written assignments, tutorials, laboratory or field work.
Prerequisite(s): At least third-year standing in the BHSc program or permission of the instructor.

HLTH 4906 [1.0 credit]
Capstone course – Research Essay
A substantial, independent essay or research proposal based critical review and research proposal, using library, database and/or bioinformatic resources, under supervision of the instructor. Topics include identification and critical review of resources, development of writing skills and formulation of research question and strategy.
Precludes additional credit for HLTH 4907, HLTH 4908 or HLTH 4909.
Prerequisite(s): fourth-year standing in the BHSc (Honours) in Health Science and permission of the Department of Health Sciences.
Lectures and discussion as scheduled by the course instructor.

HLTH 4907 [1.0 credit]
Capstone Course – Group Research Project
Collaborate on a project that addresses a real-world health concern in a team environment, similar to the workplace. Focus includes design and completion of a research project, development of communication and research skills and the opportunity to develop initiative, creativity and self-reliance.
Precludes additional credit for HLTH 4906, HLTH 4908 or HLTH 4909.
Prerequisite(s): fourth-year standing in the BHSc (Honours) in Health Science, 3rd year Honours emerging issues course in one of the BHSc concentrations (HLTH 3901, HLTH 3902, HLTH 3903, HLTH 3904 or HLTH 3905), major CGPA of at least 9.0 and permission of the Department of Health Sciences. Permission will depend, in part on capacity, such that meeting the minimum requirements does not guarantee enrollment in this capstone course.
Seminars three hours a week as scheduled by the course instructor; other hours as arranged with the Faculty Adviser.

HLTH 4908 [1.0 credit]
Capstone Course – Individual Research Project
An independent research project under the direct supervision of a faculty adviser, typically from the Department of Health Sciences. Evaluation is based on a written thesis and a poster presentation.
Precludes additional credit for HLTH 4906, HLTH 4907 or HLTH 4909.
Prerequisite(s): fourth-year standing in the BHSc (Honours) in Health Science, 3rd year Honours emerging issues course in one of the BHSc concentrations (HLTH 3901, HLTH 3902, HLTH 3903, HLTH 3904 or HLTH 3905), major CGPA of at least 9.0 and permission of the Department of Health Sciences. Permission will depend, in part on capacity, such that meeting the minimum requirements does not guarantee enrollment in this capstone course.
Lectures and discussion as scheduled by the course instructor; other hours as arranged with the Faculty Adviser.

HLTH 4909 [1.0 credit]
Capstone Course – Field Placement
An opportunity to apply learned principles and to gain relevant practical experience in a supervised health setting. Possible placements vary from year to year, and may be in a hospital, community-based health centre, government research lab, or with an international NGO. Precludes additional credit for HLTH 4906, HLTH 4907 or HLTH 4908.
Prerequisite(s): fourth-year standing in the BHSc (Honours) in Health Science, third-year Honours emerging issues in one of the BHSc concentrations (HLTH 3901, HLTH 3902, HLTH 3903, HLTH 3904 or HLTH 3905), major CGPA of at least 9.0 and permission of the Department of Health Sciences. Permission will depend, in part on capacity, such that meeting the minimum requirements does not guarantee enrollment in this capstone course.
Seminars three hours a week as scheduled by the course instructor; other hours as arranged with the Faculty Adviser; field placement hours will vary dependent on placement.

Summer session: some of the courses listed in this Calendar are offered during the summer. Hours and scheduling for summer session courses will differ significantly from those reported in the fall/winter Calendar. To determine the scheduling and hours for summer session classes, consult the class schedule at central.carleton.ca

Not all courses listed are offered in a given year. For an up-to-date statement of course offerings for the current session and to determine the term of offering, consult the class schedule at central.carleton.ca