



# **BIOL\*1080 Biological Concepts of Health**

Winter 2020

Section(s): C02

Department of Human Health and Nutritional Sciences

Credit Weight: 0.50

Version 3.00 - January 06, 2020

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## **1 Course Details**

### **1.1 Calendar Description**

This course will define the physiology of the individual as the biological foundation of health and focus on selected studies of health and illness in the adult human. Students will derive an understanding of the biological foundation of their own health as an adult and will be encouraged to expand the concepts and processes of individual health to human populations, animals and the environment. Through lectures, laboratories, small group tutorials and an individual research project, students will gain an introduction to research in the health sciences. Students lacking Grade 12 or 4U Biology should consult with their program counsellor prior to taking BIOL\*1080 in first semester.

### **1.2 Course Description**

BIOL\*1080 – Biological Concepts of Health strongly emphasizes independent learning and reasoning skills, oral and written communication in biology, and key concepts in homeostasis, physiology and health. Topics discussed in the course include: the control and communication network as the foundation of human health, select physiological systems and their role in health and illness, homeostasis and stress response, lifestyle factors and their role in overall health, and aging and health. This course complements the two other first-year biology courses, BIOL\*1070 and BIOL\*1090.

### **1.3 Timetable**

Lecture: Mondays & Wednesdays, 4:30pm-5:20pm, ROZH 104

Seminar: Weekly in SSC 2307. See Webadvisor for your specific seminar section.

Lab: Two labs per semester in SSC 3306. See courselink for your specific lab group.

### **1.4 Final Exam**

Wednesday, April 8, 2020 from 2:30pm-4:30pm

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## 2 Instructional Support

### 2.1 Instructional Support Team

<b>Instructor:</b>	William Bettger PhD
<b>Email:</b>	wbettger@uoguelph.ca
<b>Telephone:</b>	+1-519-824-4120 x53747
<b>Office:</b>	ANNU 344
<b>Office Hours:</b>	Thursdays 4:00pm-5:00pm, Fridays 11:30am-12:30pm
<b>Course Co-ordinator:</b>	Justine Tishinsky PhD
<b>Email:</b>	biol1080@uoguelph.ca
<b>Telephone:</b>	+1-519-824-4120 x53472
<b>Office:</b>	ANNU 340
<b>Office Hours:</b>	Tuesdays 10:30am-12:30pm

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## 3 Learning Resources

### 3.1 Required Resources

#### Biological Concepts of Health (Textbook)

Biological Concepts of Health, Custom 2nd Edition for BIOL\*1080, Pearson

#### Courselink (Website)

<https://courselink.uoguelph.ca>

This course makes extensive use of Courselink, the University of Guelph's online learning environment. The course website will provide information and updates about the course, including schedules, quizzes, discussions, FAQs, grades and course content.

### 3.2 Campus Resources

#### If you are concerned about any aspect of your academic program:

Make an appointment with a [Program Counsellor](#) in your degree program.

<http://www.bsc.uoguelph.ca/index.shtml>

#### If you are struggling to succeed academically:

There are numerous academic resources offered by the [Learning Commons](#) including, Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple choice exams, and general study skills. You can also set up individualized appointments with a learning specialist.

#### If you are struggling with personal or health issues:

[Counselling services](#) offers individualized appointments to help students work through personal struggles that may be impacting their academic performance.

[Student Health Services](#) is located on campus and is available to provide medical attention.

For support related to stress and anxiety, besides Health Services and Counselling Services, [Kathy Somers](#) runs training workshops and one-on-one sessions related to stress management and high performance situations.

**If you have a documented disability or think you may have a disability:**

[Student Accessibility Services](#) (SAS) formerly Centre for Students with Disabilities can provide services and support for students with a documented learning or physical disability. They can also provide information about how to be tested for a learning disability.

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## 4 Learning Outcomes

### 4.1 Course Learning Outcomes

By the end of this course, you should be able to:

1. Appreciate that definitions of health and illness have physical, mental and social dimensions.
  2. Understand that the adult life-stage has the properties of a homeodynamic system.
  3. Recognize that the coordinate control of complex physiological systems enables the process of health.
  4. Be conscious that quantifying (measuring) health is a complex task filled with uncertainty.
  5. Understand the process of health research using scientific methods and reasoning.
  6. Develop the capabilities for independent study and research, including the use of laboratory analyses, primary literature and online resources.
  7. Employ skills for working in groups cooperatively and efficiently.
  8. Display effective written and oral communication skills.
  9. Cultivate a level of comfort with the complexity and uncertainty inherent in biological and health science.
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## 5 Teaching and Learning Activities

### 5.1 Lecture

**Week 1**

**Topics:** Introduction to the Biological Concepts of Health

**Week 2**

**Topics:** Research and Research Models in Evidence-Based Medicine

**Week 3**

**Topics:** Biomarkers in the Healthspan: The Dimension of Time

Chronobiology

**Week 4**

**Topics:** Chronobiology

Mechanisms of Intercellular Communication

**Week 5**

**Topics:** Mechanisms of Intercellular Communication

Hormones and the Endocrine System

**Week 6**

**Topics:** Overview of the Control and Communication Network (CCN): The Nervous System and Neurotransmitter Networks

**Week 7**

**Topics:** CCN: Local Support and Defense System

**Week 8**

**Topics:** CCN: The Cardiovascular System

**Week 9**

**Topics:** CCN: The Gastrointestinal System

**Week 10**

**Topics:** CCN: The Energy Distribution System

**Week 11**

**Topics:** CCN: The Energy Distribution System

**Week 12**

**Topics:** Lifestyle, Aging and Related Diseases

**5.2 Seminar**

**Week 1**

**Topics:** Introduction

**Week 2**

**Topics:** Scientific Writing

**Week 3**

**Topics:** Primary Literature

**Week 4**

**Topics:** Scientific Presentation Design

**Week 5**

**Topics:** Scientific Oral Communication

Oral Communication Workshop

**Week 6**

**Topics:** Final Disease Seminar Presentations

**Week 7**

**Topics:** Final Disease Seminar Presentations

**Week 8**

**Topics:** Final Disease Seminar Presentations

**Week 9**

**Topics:** Interdisciplinary Project Seminar One

**Week 10**

**Topics:** Interdisciplinary Project Seminar Two

**Week 11**

**Topics:** Interdisciplinary Project Presentations

**5.3 Lab**

**Week 2**

**Topics:** Independent Learning Workshop and Quiz

**Week 3**

**Topics:** Pre-Lab One Quizzes

**Week 4**

**Topics:** Lab One

**Week 8**

**Topics:** Pre-Lab Two Quizzes

**Week 9**

**Topics:** Lab Two

**5.4 Course Content**

**Part I. The Human Organism**

Humans in the world of biology

Chemistry comes to life

The cell

Organization and Homeostasis

**Part II. What is Health and Illness?**

What is health? Changing perspectives

Individual, cultural and lifespan perspectives

The seven dimensions of health and wellness

Biological concepts of health and illness

**Part III. System Control & Communication as the Foundation of Individual Health**

The Control and Communication Network

Cell-Cell Communication

The brain/central nervous system

The peripheral nervous system and the senses

The endocrine system

The local support and defense system

The cardiovascular and lymphatic systems

The energy distribution system

The digestive system

**Part IV. Lifestyle Factors and Health**

Physical activity and exercise

**Part V. Aging and Health**

Theories on aging

Changes in the body and mind with aging

## 6 Assessments

### 6.1 Marking Schemes & Distributions

Assessment	Weight (%)	Learning Outcome
Online Quiz	3	1, 2, 3, 4
Seminar Assignments	25	1, 2, 3, 6, 7, 8
Lab Assignments	12	1, 2, 3, 4, 5, 6, 7, 8, 9
Interdisciplinary Project	10	1, 2, 3, 4, 5, 6, 7, 8, 9
Midterm	20	1, 2, 3, 4
Final Exam	30	1, 2, 3, 4
Total	100	

### 6.2 Assessment Details

**Online Biochemistry and Cell Biology Refresher Quiz (3%)**

**Date:** Fri, Jan 10, 12:01 AM - Fri, Jan 17, 11:59 PM, Online

**Learning Outcome:** 1, 2, 3, 4, 9

**Seminar Homework Assignment One (4%)**

**Date:** Week 2, In Seminar

**Learning Outcome:** 1, 2, 3, 5, 6, 8, 9

**Seminar Homework Assignment Two (4%)**

**Date:** Week 4, In Seminar

**Learning Outcome:** 1, 2, 3, 5, 6, 8, 9

**In Seminar Assignment (1%)**

**Date:** Week 5, In Seminar

**Learning Outcome:** 5, 6, 7, 8



**Oral Communication Workshop Quiz (1%)****Date:** Mon, Feb 3, 12:01 AM - Fri, Feb 7, 11:59 PM, Online**Learning Outcome:** 6, 8**Final Seminar Oral Presentation (7%)****Date:** Week 6, 7 or 8 (check Disease Seminar Handbook), In Seminar**Learning Outcome:** 1, 7, 8, 9**Final Seminar Written Assignment (7%)****Date:** Week 6, 7 or 8 (check Disease Seminar Handbook), In Seminar**Learning Outcome:** 1, 2, 3, 5, 6, 8, 9**Seminar Peer Evaluation (1%)****Date:** Week 6, 7 or 8 (check Disease Seminar Handbook), In Seminar**Learning Outcome:** 7, 8**Independent Learning Workshop Quiz (1%)****Date:** Mon, Jan 20, 12:01 AM - Fri, Jan 24, 11:59 PM, Online**Learning Outcome:** 6**Pre-Lab One Quizzes (2%)****Date:** Mon, Jan 20, 12:01 AM - Fri, Jan 24, 11:59 PM, Online**Learning Outcome:** 1, 2, 3, 4, 5, 6, 9**Lab One Homework Assignment Part One (4%)****Date:** Wed, Feb 5, 4:00 PM, ANNU 340 Dropbox**Learning Outcome:** 1, 2, 3, 4, 5, 6, 7, 8, 9**Lab One Homework Assignment Part Two (1%)****Date:** Wed, Feb 5, 11:59 PM, Online Dropbox**Learning Outcome:** 2, 4**Pre-Lab Two Quizzes (2%)****Date:** Mon, Mar 2, 12:01 AM - Fri, Mar 6, 11:59 PM, Online**Learning Outcome:** 1, 2, 3, 4, 5, 6, 9**Lab Two Assignment (2%)****Date:** Week 9, In lab**Learning Outcome:** 1, 2, 3, 4, 5, 6, 7, 8, 9**Interdisciplinary Project (IdP) (10%)****Date:** Week 11**Learning Outcome:** 1, 2, 3, 4, 5, 6, 7, 8, 9

As the culmination of the practicum experience, this project will be based on a case study, which will be suitable for discussion in all three courses. Assessment will include a visual presentation of the group's work in a poster format, which will bring together several aspects of the 'skills and attributes' of a biologist. Final exams in each course will also assess the students' understanding of interdisciplinary problem solving.

**Midterm (20%)****Date:** TBA, TBA**Learning Outcome:** 1, 2, 3, 4

Exams will cover primarily lecture material, as well as material from the disease seminars,

independent learning labs, the interdisciplinary project, and assigned text readings. Both the midterm and final are multiple choice.

### **Final Exam (30%)**

**Date:** Wed, Apr 8, 2:30 PM - , 4:30 PM, TBA

**Learning Outcome:** 1, 2, 3, 4

Exams will cover primarily lecture material, as well as material from the disease seminars, independent learning labs, the interdisciplinary project, and assigned text readings. Both the midterm and final are multiple choice. The final exam is NOT cumulative.

## **6.3 Assessments**

Exams: Exams will cover primarily lecture material, as well as material from the disease seminars, independent learning labs, the interdisciplinary project, and assigned text readings. Both the midterm and final are multiple choice. The final exam is NOT cumulative.

Laboratory Reports: Pre-lab activities and individual laboratory reports, with demonstration of independent learning and an appreciation of experimental design and data interpretation will be submitted for evaluation.

Seminar Project: The seminar evaluation is based on weekly homework assignments, a peer-evaluation and the design and delivery of an oral presentation (group PowerPoint presentation) with accompanying individual written assignment.

Interdisciplinary Project Poster: As the culmination of the practicum experience, this project will be based on a case study, which will be suitable for discussion in all three courses. Assessment will include a visual presentation of the group's work in a poster format, which will bring together several aspects of the 'skills and attributes' of a biologist. Final exams in each course will also assess the students' understanding of interdisciplinary problem solving.

### **Turnitin**

In this course, your instructor may be using Turnitin, integrated with the CourseLink Dropbox tool, to detect possible plagiarism, unauthorized collaboration or copying as part of the ongoing efforts to maintain academic integrity at the University of Guelph.

### **Policy for Regrading Assignments**

Students who wish to have their assignments re-graded must submit their assignment with their concerns indicated in writing within 1 week of return of the assignment. The entire assignment will be re-graded so the mark may go up, down or remain unchanged.

## **7 Course Statements**

## 7.1 Role in Curriculum

This course is one of three courses (Discovering Biodiversity, Molecular and Cellular Biology, Biological Concepts of Health) offered as part of an integrated first year biology experience. Collectively the courses provide a foundation in the major academic and research axes of life science at the University of Guelph. The three courses provide distinct yet complementary contexts for biological inquiry, and will highlight modes of thinking, controversies and concepts associated with each theme. Importantly, the courses are linked through a common practicum that introduces major skills of inquiry and provides interactions among students in each course. Ultimately, the introduction and reinforcement of eight skills of inquiry and 18 concepts in biology are coordinated across the three courses. The learning objectives are explicit and can be extended and reinforced in subsequent years of study.

## 7.2 Conflicts and Assignment Submissions

Direct conflicts with the midterm and/or final exam must be communicated to the course coordinator by the end of week 2 of the semester.

Seminar assignments are due in seminar (first 5 minutes). No electronic submissions or late submissions will be accepted.

Lab assignments that are late will be subject to a 10% deduction per business day.

We expect you to become familiar with the University of Guelph grading policy:  
<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-grds-proc.shtml>

## 7.3 Policy for Assignment Regrades

Students who wish to have their assignments re-graded must submit their assignment with their concerns indicated in writing within 1 week of return of the assignment. The entire assignment will be re-graded so the mark may go up, down or remain unchanged.

## 7.4 Use of Personal Information

Personal information is used by University officials in order to carry out their authorized academic and administrative responsibilities and also to establish a relationship for alumni and development purposes. The University of Guelph's policy on the Collection, Use and Disclosure of Personal Information can be found in the Undergraduate Calendar.  
(<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/intro/index.shtml>)

# 8 Department of Human Health and Nutritional Sciences Statements

## 8.1 Academic Advisors

If you are concerned about any aspect of your academic program:

- Make an appointment with a program counsellor in your degree program. [B.Sc. Academic Advising](#) or [Program Counsellors](#)

## 8.2 Academic Support

If you are struggling to succeed academically:

- Learning Commons: There are numerous academic resources offered by the Learning Commons including, Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple choice exams, and general study skills. You can also set up individualized appointments with a learning specialist.  
<http://www.learningcommons.uoguelph.ca/>
- Science Commons: Located in the library, the Science Commons provides support for physics, mathematic/statistics, and chemistry. Details on their hours of operations can be found at: <http://www.lib.uoguelph.ca/get-assistance/studying/chemistry-physics-help> and <http://www.lib.uoguelph.ca/get-assistance/studying/math-stats-help>

## 8.3 Wellness

If you are struggling with personal or health issues:

- Counselling services offers individualized appointments to help students work through personal struggles that may be impacting their academic performance.  
<https://www.uoguelph.ca/counselling/>
- Student Health Services is located on campus and is available to provide medical attention. <https://www.uoguelph.ca/studenthealthservices/clinic>
- For support related to stress and anxiety, besides Health Services and Counselling Services, Kathy Somers runs training workshops and one-on-one sessions related to stress management and high performance situations.  
<http://www.selfregulationskills.ca/>

# 9 University Statements

## 9.1 Email Communication

As per university regulations, all students are required to check their e-mail account regularly: e-mail is the official route of communication between the University and its students.

## 9.2 When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

Graduate Calendar - Grounds for Academic Consideration

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

Associate Diploma Calendar - Academic Consideration, Appeals and Petitions

<https://www.uoguelph.ca/registrar/calendars/diploma/current/index.shtml>

### 9.3 Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all students (undergraduate, graduate and diploma) except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in their respective Academic Calendars.

Undergraduate Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml>

Graduate Calendar - Registration Changes

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-reg-regchg.shtml>

Associate Diploma Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/diploma/current/c08/c08-drop.shtml>

### 9.4 Copies of Out-of-class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

### 9.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be

noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance and not later than the 40th Class Day.

For Guelph students, information can be found on the SAS website  
<https://www.uoguelph.ca/sas>

For Ridgetown students, information can be found on the Ridgetown SAS website  
<https://www.ridgetownc.com/services/accessibilityservices.cfm>

## 9.6 Academic Integrity

The University of Guelph is committed to upholding the highest standards of academic integrity, and it is the responsibility of all members of the University community—faculty, staff, and students—to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff, and students have the responsibility of supporting an environment that encourages academic integrity. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

Undergraduate Calendar - Academic Misconduct  
<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

Graduate Calendar - Academic Misconduct  
<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

## 9.7 Recording of Materials

Presentations that are made in relation to course work - including lectures - cannot be recorded or copied without the permission of the presenter, whether the instructor, a student, or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

## 9.8 Resources

The Academic Calendars are the source of information about the University of Guelph's procedures, policies, and regulations that apply to undergraduate, graduate, and diploma programs.

Academic Calendars

<https://www.uoguelph.ca/academics/calendars>

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