



BIOL*1080 Biological Concepts of Health

Winter 2019

Section(s): C02

Department of Human Health and Nutritional Sciences

Credit Weight: 0.50

Version 2.00 - January 07, 2019

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 Timetable

Lecture: Monday & Wednesday, 4:30pm - 5:20pm, ROZH 104

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

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

1.3 Final Exam

Friday April 12th 2:30pm-4:30pm

2 Instructional Support

2.1 Instructional Support Team

Instructor:	Dr. William Bettger
Email:	wbettger@uoguelph.ca
Telephone:	+1-519-824-4120 x53747
Office:	ANNU 344
Office Hours:	Thursdays 4:00-5:00pm, Fridays 11:30am-12:30pm

Course Co-ordinator: Dr. Justine Tishinsky
Email: jtishins@uoguelph.ca
Telephone: +1-519-824-4120 x53472
Office: ANNU 340
Office Hours: Mondays 12pm-2pm

3 Learning Resources

3.1 Required Resource(s)

Biological Concepts of Health (Textbook)

Biological Concepts of Health, Second Custom 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.

4 Learning Outcomes

4.1 Course Learning Outcomes

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

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

5.1 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
 - Select Physiological Systems
 - The cardiovascular and lymphatic systems
 - The digestive system
 - The energy distribution system
- Part IV. Homeostasis, Allostasis, and Stress
 - What is stress?
 - Homeostasis, allostasis and stress
 - Physiological complexity and health
- Part V. Lifestyle Factors and Health
 - Physical activity and exercise
 - Diet, natural health products and nutrition
 - Therapeutic, performance enhancement and recreational drugs
 - Stress management
 - Achieving the balance of psychosocial health
 - Preventing and fighting disease
- Part VI. Aging and Health

- Theories on aging
- Changes in the body and mind with aging
- Understanding death and dying

5.2 Course Schedule

Week	Dates	Lecture Topic	Seminar	Independent Learning Activities
1	Jan 7-11	Introduction to the Biological Concepts of Health	Introduction	
2	Jan 14-18	Research and research models in evidence based medicine	Writing	Biochem & Cell Bio Quiz Independent Learning Workshop
3	Jan 21-25	Biomarkers in the healthspan: the dimension of time Chronobiology	Primary Literature	Pre-Lab One Quizzes
4	Jan 28-Feb 1	Chronobiology Mechanisms of Intercellular communication	Presentation Design & Delivery	Lab One
5	Feb 4-8	Mechanisms of Intercellular communication Hormones & the Endocrine System	Oral Communication	
6	Feb 11-15	Overview of Control and Communication Network (CCN): the nervous system & neurotransmitter networks	Final Disease Presentations	Oral Communication Workshop
Feb	READING	NO CLASSES	NO SEMINAR	

18-22	WEEK			
7	Feb 25- March 1	CCN: Local Support & Defense System	Final Disease Presentations	
8	March 4-8	CCN: Cardiovascular System	Final Disease Presentations	Pre-Lab Two Quizzes
9	March 11- 15	CCN: Gastrointestinal System	IdP Seminar 1	Lab Two
10	March 18- 22	CCN: Energy Distribution System	IdP Seminar 2	
11	March 25- 29	CCN: Energy Distribution System	IdP Poster Presentations	
12	April 1-5	Lifestyle, Aging & Related Diseases	NO SEMINAR	

6 Assessments

6.1 Marking Schemes & Distributions

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

Assessment Details

Online Quiz (3%)

Date: Fri, Jan 18

Learning Outcome(s): 1,5

Independent Learning Quiz (1%)

Date: Fri, Jan 18

Learning Outcome(s): 2,5

Pre-Lab One Quizzes (2%)

Date: Fri, Jan 25

Learning Outcome(s): 5

Homework Assignment #1 (4%)

Date: Week 2, In Seminar

Learning Outcome(s): 2,4

Homework Assignment #2 (4%)

Date: Week 4, In Seminar

Learning Outcome(s): 2,4

In-Seminar Assignment (1%)

Date: Week 5, In Seminar

Learning Outcome(s): 2,3,4

Lab One Assignment Part 1 (4%)

Date: Wed, Feb 6

Learning Outcome(s): 2,4,5

Lab One Assignment Part 2 (1%)

Date: Wed, Feb 6

Learning Outcome(s): 2,4

Oral Communication Quiz (1%)

Date: Fri, Feb 8

Learning Outcome(s): 4

Final Oral Presentation (7%)

Date: Week 6, 7, or 8, In Seminar

Learning Outcome(s): 2,3,4

Final Written Report (7%)

Date: Week 6, 7, or 8, In Seminar

Learning Outcome(s): 2,4

Peer Evaluation (1%)

Date: Week 6, 7, or 8, In Seminar

Learning Outcome(s): 3

Pre-Lab Two Quizzes (2%)

Date: Fri, Mar 8

Learning Outcome(s): 5

Lab Two Assignment (2%)

Date: In lab

Learning Outcome(s): 2,4,5

Midterm (20%)

Date: Wed, Feb 13, TBA

Learning Outcome(s): 1,5

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.

Interdisciplinary Project (10%)

Date: Week 11

Learning Outcome(s): 1,2,3,4

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.

Final Exam (30%)

Date: Fri, Apr 12, 2:30 PM - , 4:30 PM, TBA

Learning Outcome(s): 1,5

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.

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 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.

7.3 Policy for Re-Grading 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.

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.uoguelph.ca/~ksomers/>
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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>

9.3 Drop Date

Courses that are one semester long must be dropped by the end of the fortieth class day; two-semester courses must be dropped by the last day of the add period in the second semester. The regulations and procedures for course registration are available in the Undergraduate and Graduate 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>

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.

More information can be found on the SAS website
<https://www.uoguelph.ca/sas>

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>