



BIOL*1080 Biological Concepts of Health

Winter 2023

Section(s): C02

Department of Human Health and Nutritional Sciences

Credit Weight: 0.50

Version 1.00 - January 05, 2023

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, 4:30am-5:20am in-person in ROZH 104. Lecture recordings will also be made available.

Seminar: Weekly in-person seminars in SSC 2307 - see Webadvisor for your specific seminar section.

Lab: Two in-person labs per semester in SSC 3306 - see Courselink for your specific lab group.

1.4 Final Exam

Thursday April 13 11:30am-1:30pm EST

2 Instructional Support

2.1 Instructional Support Team

Instructor: William Bettger PhD
Email: wbettger@uoguelph.ca
Telephone: +1-519-824-4120 x53747
Office: ANNU 344
Office Hours: Individual (or small group) meetings by request regarding anything lecture material or exam related.

Course Co-ordinator: Justine Tishinsky PhD
Email: biol1080@uoguelph.ca
Telephone: +1-519-824-4120 x53472
Office: ANNU 340
Office Hours: Individual (or small group) meetings by request regarding anything outside of lecture (seminars, lab, integrative thinking project, schedule conflicts, etc.).

3 Learning Resources

3.1 Required Resources

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.

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 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 Assessment Details

Seminar Homework Assignment (4%)

Date: Week 4, Due to the Online Dropbox

Learning Outcome: 1, 2, 3, 4, 5, 6, 7, 8, 9

Seminar Oral Presentation (10%)

Date: Week 7, 8 or 9 (see Disease Seminar Handbook), Presentation will be given live in seminar

Learning Outcome: 1, 2, 3, 4, 5, 6, 7, 8, 9

Seminar Final Written Assignment (10%)

Date: Week 7, 8 or 9 (see Disease Seminar Handbook), Due to the Online Dropbox

Learning Outcome: 1, 2, 3, 4, 5, 6, 7, 8, 9

Seminar Peer Evaluation (1%)

Date: Week 7, 8 or 9 (see Disease Seminar Handbook), Due to the Online Dropbox

Learning Outcome: 7

Pre-Lab One Activites (1%)

Date: Mon, Jan 30, 12:01 PM - Fri, Feb 3, 11:59 PM, Online - Quizzes Tab
Learning Outcome: 1, 2, 3, 4, 5, 6, 8, 9

Post-Lab One Activities (9%)

Date: Fri, Feb 17, 11:59 PM, Online - Quizzes Tab and Dropbox
Learning Outcome: 1, 2, 3, 4, 5, 6, 7, 8, 9

Pre-Lab Two Activities (1%)

Date: Mon, Mar 6, 12:01 AM - Fri, Mar 10, 11:59 PM, Online - Quizzes Tab
Learning Outcome: 1, 6, 9

Lab Two Report (4%)

Date: In Lab Two, SSC 3306
Learning Outcome: 4, 5, 6, 7, 8, 9

Integrative Thinking Assignment (10%)

Date: Fri, Mar 31, 11:59 PM, Due to the Online Dropbox
Learning Outcome: 1, 2, 3, 4, 5, 6, 8, 9

Midterm One (15%)

Date: Mon, Feb 6, 4:30 PM - 5:20 PM, Online - Quizzes Tab
Learning Outcome: 1, 2, 3, 4

Midterm Two (15%)

Date: Mon, Mar 13, 4:30 PM - 5:20 PM, Online - Quizzes Tab
Learning Outcome: 1, 2, 3, 4

Final Exam (20%)

Date: Thu, Apr 13, 11:30 AM - , 1:30 PM, TBD
Learning Outcome: 1, 2, 3, 4

6.2 Assessments

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 Respondus LockDown Browser and Monitor Requirements

Respondus LockDown Browser is a locked browser for taking quizzes in CourseLink. It will be required. It prevents you from printing and copying; using other operating software; using search engines (e.g., going to another URL); communicating via instant messaging; and it blocks non-web-related software (e.g., Adobe PDF, Microsoft Word).

Respondus Monitor is a companion application for LockDown Browser that uses webcam and video technology to ensure academic integrity during online exams. The software captures video during the exam and allows the instructor to review the video once the exam is completed.

In order to use Respondus LockDown Browser and Monitor, you must meet the following technical requirements so that you can take the practice test and midterm exam:

1. Operating Systems: Windows 10, 8, 7; Mac OS X 10.10 or higher.
2. Memory: Windows 2 GB RAM; Mac 512 MB RAM.
3. For Mac users: Safari must function properly on the computer.
4. Mac users must have Adobe Flash Player installed to Safari, even if a different browser is normally used.
5. Functioning webcam and microphone. The webcam and microphone can be built into your computer or can be the type that plugs in with a USB cable. (You will be required to do an environment scan of your room, so please ensure you can move your computer, laptop or webcam for this scan.)
6. A broadband Internet connection. It is recommended that you access the Internet via a wired connection.

If you have any concerns about meeting system requirements, contact CourseLink Support. They will work with you to find alternative solutions or make alternative arrangements.

7.2 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. 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.

7.3 Grading

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

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>

All requests for assignment regrades must be made in writing to biol1080@uoguelph.ca within one week of grade/feedback release.

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/>

8.4 Personal information

Personal information is collected under the authority of the University of Guelph Act (1964), and in accordance with Ontario's Freedom of Information and Protection of Privacy Act (FIPPA) <http://www.e-laws.gov.on.ca/index.html>. This 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.

For more information regarding the Collection, Use and Disclosure of Personal Information policies please see the Undergraduate Calendar.
(<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/intro/index.shtml>)

8.5 Course Offering Information Disclaimer

Please note that course delivery format (face-to-face vs online) is subject to change up to the first-class day depending on requirements placed on the University and its employees by public health bodies, and local, provincial and federal governments. Any changes to course format prior to the first class will be posted on WebAdvisor/Student Planning as they become available.

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 make a booking at least 14 days in advance, and no later than November 1 (fall), March 1 (winter) or July 1 (summer). Similarly, new or changed accommodations for online quizzes, tests and exams must be approved at least a week ahead of time.

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>

9.9 Disclaimer

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings, changes in classroom protocols, and academic schedules. Any such changes will be announced via CourseLink and/or class email.

This includes on-campus scheduling during the semester, mid-terms and final examination schedules. All University-wide decisions will be posted on the COVID-19 website (<https://news.uoguelph.ca/2019-novel-coronavirus-information/>) and circulated by email.

9.10 Illness

Medical notes will not normally be required for singular instances of academic consideration, although students may be required to provide supporting documentation for multiple missed assessments or when involving a large part of a course (e.g.. final exam or major assignment).

9.11 Covid-19 Safety Protocols

For information on current safety protocols, follow these links:

- <https://news.uoguelph.ca/return-to-campusess/how-u-of-g-is-preparing-for-your-safe-return/>
- <https://news.uoguelph.ca/return-to-campusess/spaces/#ClassroomSpaces>

Please note, these guidelines may be updated as required in response to evolving University, Public Health or government directives.
