



BIOL*1080 Biological Concepts of Health

Fall 2018
Section(s): C01

Department of Human Health and Nutritional Sciences
Credit Weight: 0.50
Version 1.00 - September 04, 2018

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: Monday & Wednesday, 8:30am - 9:20am, ROZH 104

Seminars: Weekly in SSC 3307. See Webadvisor for your specific seminar section

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

1.4 Final Exam

Wednesday December 5th 2:30pm-4:30pm

2 Instructional Support

2.1 Instructor(s)

David Dyck PhD

Email: ddyck@uoguelph.ca
Telephone: +1-519-824-4120 x56578
Office: ANNU 345
Office Hours: Tuesdays 1pm-3pm for lecture-based inquiries

2.2 Instructional Support Team

Course Co-ordinator: Justine Tishinsky PhD
Email: biol1080@uoguelph.ca
Telephone: +1-519-824-4120 x53472
Office: ANNU 340
Office Hours: Wednesdays 1:30pm-3:30pm for all other (non-lecture) based inquiries

3 Learning Resources

3.1 Required Resource(s)

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.

4 Learning Outcomes

4.1 Course Learning Outcomes

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

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

| Week | Dates | Lecture Topic | Seminar | Independent Learning Activities |
|-------------|--------------|--|--------------------------------|--|
| 1 | Sept 10-14 | Introduction to the Biological Concepts of Health | Introduction | Orientation Modules |
| 2 | Sept 17-21 | Research and research models in evidence based medicine | Scientific Writing | Pre-Lab One Quizzes Independent Learning Workshop |
| 3 | Sept 24-28 | Biomarkers in the healthspan: the dimension of time Chronobiology | Primary Literature | Lab One |
| 4 | Oct 1-5 | Chronobiology Mechanisms of Intercellular communication | Scientific Presentation Design | |
| 5 | Oct 8-12 | Mechanisms of Intercellular communication Hormones & the Endocrine System | Scientific Oral Communication | Oral Communication Workshop |

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|----|---------------------|---|-----------------------------|---------------------|
| 6 | Oct 15-19 | Overview of Control and Communication Network (CCN): the nervous system & neurotransmitter networks | Final Disease Presentations | |
| 7 | Oct 22-26 | CCN: Local Support & Defense System; Midterm | Final Disease Presentations | Pre-Lab Two Quizzes |
| 8 | Oct 29- Nov 2 | CCN: Cardiovascular System | Final Disease Presentations | Lab Two |
| 9 | Nov 5-9 | CCN: Gastrointestinal System | IdP Seminar 1 | |
| 10 | Nov 12-16 | CCN: Energy Distribution System | IdP Seminar 2 | |
| 11 | Nov 19-23 | CCN: Energy Distribution System | IdP Poster Presentations | |
| 12 | Nov 26-30 | Lifestyle, Aging & Related Diseases | | |

Part I. The Human Organism

- a. Humans in the world of biology
- b. Chemistry comes to life
- c. The cell
- d. Organization and Homeostasis

Part II. What is Health and Illness?

- a. What is health? Changing perspectives
- b. Individual, cultural and lifespan perspectives
- c. The seven dimensions of health and wellness
- d. Biological concepts of health and illness

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

- a. The Control and Communication Network
- b. Cell-Cell Communication
- c. The brain/central nervous system
- d. The peripheral nervous system and the senses
- e. The endocrine system
- f. The local support and defense system
- g. Select Physiological Systems
 - 1. The cardiovascular and lymphatic systems
 - 2. The energy distribution system
 - 3. The digestive system

Part IV. Lifestyle Factors and Health

- a. Physical activity and exercise

Part V. Aging and Health

- a. Theories on aging
- b. Changes in the body and mind with aging

6 Assessments

6.1 Marking Schemes & Distributions

| Assessment | Weight (%) | Learning Outcome |
|------------|------------|------------------|
|------------|------------|------------------|

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|---------------------------|-----|---------------|
| Orientation Modules | 1 | 6 |
| Seminar Assignments | 25 | 6, 7, 8 |
| Lab Assignments | 14 | 5, 6, 7, 8, 9 |
| Interdisciplinary Project | 10 | 5, 6, 7, 8, 9 |
| Midterm | 20 | 1, 2, 3, 4 |
| Final Exam | 30 | 1, 2, 3, 4 |
| Total | 100 | |

6.2 Assessment Details

Orientation Modules (1%)

- Code of Conduct (0.5%) & Skills Self-Assessment (0.5%)
- Online
- Due Monday September 17th

Seminar Assignments (25%)

- Homework Assignment One (4.5%) Due In Seminar in Week 3
- Homework Assignment Two (4.5%) Due in Seminar in Week 5
- Oral Communication Quiz (1%) Due Friday October 5th - Online
- Final Oral Presentation (7%) Due in Seminar Week 6, 7 or 8 (check Disease Seminar Handbook)
- Final Written Report (7%) Due in Seminar Week 6, 7 or 8 (check Disease Seminar Handbook)
- Peer Evaluation (1%) Due in Seminar Week 6, 7 or 8 (check Disease Seminar Handbook)

Lab Assignments (14%)

- Independent Learning Quiz (1%) - Due Friday September 21st - Online
- Pre-Lab One Quizzes (1%) - Due Friday September 21st - Online
- Lab One Homework Assignment (5%) - Due Wednesday October 3rd to ANNU 340 Dropbox
- Pre-Lab Two Quizzes (2%) - Due Friday October 26th - Online
- Lab Two Assignment (5%) - Due In Lab

Interdisciplinary Project (IdP) (10%)

- Due Week 11

Midterm (20%)

Date: Wed, Oct 24, 8:30 AM - 9:20 AM, ROZH 104

Final Exam (30%)

Date: Wed, Dec 5, 2:30 PM - 4:30 PM, TBA

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 Grading

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 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.
- 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: [Chemistry & Physics Help](#) and [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.
 - [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](#).
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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 regulations and procedures for [Academic Consideration](#) are detailed in the Undergraduate Calendar.

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 [Dropping Courses](#) are available in the Undergraduate Calendar.

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: www.uoguelph.ca/sas

9.6 Academic Misconduct

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 discourages misconduct. 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.

The [Academic Misconduct Policy](#) is detailed in the Undergraduate Calendar.

9.7 Recording of Materials

Presentations which are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, a classmate 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 which apply to undergraduate, graduate and diploma programs.
