



BIOL 2040 – Human Physiology I
University of Windsor
Online via Blackboard
Summer 2022

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OFFICE HOURS: Mon 6:00-7:00pm, Thurs 10:00-11:00 am or by appointment
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COURSE DESCRIPTION

Calendar description: Introduction to human physiology: a systems approach. Topics include homeostasis and feedback control, enzymes and energy, membrane transport, metabolism, and the nervous, skeletal muscle, and cardiovascular systems. (Prerequisites: any two first year biology courses.)

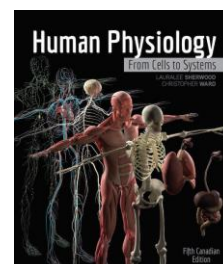
This is an online distance course. It is important that you refer to the Schedule (p 4-7) so you can meet deadlines. Refer to http://ask.uwindsor.ca/app/answers/detail/a_id/688 for the computer/technology requirements for an online University of Windsor course. This course may utilize online proctoring systems for midterms and/or final exams. Additional details will be provided closer to the dates

Planned topics

1. Foundations of Physiology
2. Cell Physiology
3. The Central Nervous System
4. The Peripheral Nervous System
5. Muscle Physiology
6. Cardiac Physiology
7. Vascular Physiology

Textbook

Human Physiology: From Cells to Systems, 5th Edition
Lauralee Sherwood, Christopher Ward. ISBN 9780176912352



Available at the University of Windsor Bookstore in different versions (prices as of April 2022)

- **EBook Download**-Online digital eText version of the textbook (\$84.25).
- **Hardback version**-more expensive (\$130.35)
- **NOTE:** It is possible to purchase the book from other vendors (prices will vary) should you wish. Other textbooks (or earlier editions of this book) may be used, but readings, figure numbers, suggested review questions etc. in the lecture slides will refer to the textbook above.

Communication: Please email me by the address on page 1. Students should use their uwindsor.ca email address for correspondence relating to the course. (Email from other addresses, Hotmail etc, are likely to be filtered as spam/junk.). Please summarize the topic in the subject line eg ‘confusion re conduction system of heart’. Include your **full name and student number** in the body of the email. Please check to see if your question has been addressed in class or in Blackboard before emailing.

I will do my best to reply within 1-2 days. I will be checking email daily. Make sure to check your UWin email and the announcements in BB regularly as well. Note: You may not get a response right away, particularly if you email in the evening or on the weekend.

Course Website (Blackboard): PowerPoint lecture notes, links to audio lectures (posted on Microsoft Stream), any review materials, learning activities, lecture exams, and grades are posted in Blackboard. Additional items may be posted throughout the term.

Lecture Notes: Lecture notes (and links to audio versions of them) will be posted on the course Blackboard site. You are **strongly** advised to have them available to you (digitally at the very least) during lectures. A link to the lectures will be on Blackboard.

Class Readings/Review Material: Readings and review materials are meant to reinforce material covered in the online lectures and to present material in a slightly different context. You are not responsible for material in the text not covered in class. It is **strongly** suggested you complete the review materials as a study guide for lecture exams.

Office Hours via Canvas: Online office hours will be held on Canvas using the ‘**Virtual Classroom**’. Online office hours are listed on page 1. You will receive an email announcing the conference once it is available. These are not mandatory, and no new material will be presented; they are for answering questions, getting help etc. You may drop in on office hours at any time.

The Learning Environment

Research indicates that students who are active in their learning have better academic success than those who are less engaged or distracted in class (Freeman et al., 2014; Michael, 2006; Prince, 2004).

- Studies that have shown “**multi-tasking**” in class is detrimental to learning. If you’re trying to go back and forth between course-related material and other websites (or assignments for other courses, etc.), this will affect how well you’re learning/working.
- **Videos and Notifications** (e.g., beeps/vibrations for new emails, text messages, etc.) are highly distracting. Please **turn these off** before class.
- **Note-taking on computers (vs. by hand) is associated with lower-quality learning/test scores.** If you take notes by computer, develop the habit of summarizing important points, and/or noting things you want to look up outside of class (and why). It’s helpful to review your notes regularly, summarizing and integrating material.

Learning Accommodations

If you have special needs that require accommodation, you are encouraged to contact the Student Accessibility Services early in each semester to complete the necessary processes. Information is available at: <http://www.uwindsor.ca/studentaccessibility/> Please also refer to **Important University of Windsor Policies #5** on page 9.

Campus Support Services for Students

- Questions about online learning or have a technology related question? Visit: <http://ask.uwindsor.ca/>
- Blackboard problems should be directed to IT services - submit a request through the TeamDynamix support portal: <http://www.uwindsor.ca/its/>

Feeling Overwhelmed? All of the supports below are *free* to University of Windsor students!

From time to time, students face obstacles that can affect academic performance. If you experience difficulties and need help, it is important to reach out to someone. For help addressing mental or physical health concerns **on campus**:

- **Student Health Services** (<http://www.uwindsor.ca/studenthealthservices/>)
- **Student Counselling Centre** (<http://www.uwindsor.ca/studentcounselling/>)

Please visit their respective websites for more information on available services and COVID protocol.

My Student Support Program (MySSP)

An immediate and fully confidential **24-hour mental health support** that can be accessed for free through chat, online, and telephone. Available to all University of Windsor students and offered in over 30 languages.

Call: **1-844-451-9700**, visit <https://keepmesafe.myissp.com/>

Download the app: My SSP app: [Apple App Store/Google Play](#).

Or visit: www.mystudentsupport.com.

Good2Talk:

Helpline for any post-secondary student problems. Call **1-866-925-5454** or visit www.good2talk.ca.

If you are in crisis, please call the Community Crisis Centre at 519-973-4435 or 911

The University of Windsor offers a broad range of student support services. Please visit:

<http://www.uwindsor.ca/156/lots-student-support-services>

Course Schedule BIOL 2040 - Human Physiology I (it is suggested you print out this syllabus)

Date	Topic/Focus	Learning Objectives By the end of the lecture, the student will be familiar with:	Required Preparation/ Learning Activity
<p>Week 1 Week of May 9th</p>	<p>Course overview & policy review Foundations of Physiology</p>	<ul style="list-style-type: none"> • The term <i>physiology</i> and approaches to understanding physiology. • The levels of organization in the body. • The concept of homeostasis. • The principles of homeostatic control systems. 	<p>Reading: Chapter 1 Learning Activity 1 Due May 15, 11:59pm</p>
<p>Week 2 Week of May 16th</p>	<p>Cell Physiology</p>	<ul style="list-style-type: none"> • Cell structure. • The basics of cellular metabolism and ATP. • The structure and function of, and transport across the plasma membrane. • Intercellular communication (membrane potential, graded and action potentials, synapses). 	<p>Reading: Chapters 2 & 3 Learning Activity 2 Due May 22, 11:59pm</p>
<p>Week 3 Week of May 23rd</p>	<p>Cell Physiology cont'd The Central Nervous System</p>	<ul style="list-style-type: none"> • The structure and function of the nervous system. • How the central nervous system protects itself. • The organization and function of the cerebral cortex. • The organization and function of the basal ganglia, thalamus, and hypothalamus. 	<p>Reading: Chapter 4 Learning Activity 3 Due June 5th, 11:59pm</p>
<p>Week 4 Week of May 30th</p>	<p>The Central Nervous System cont'd</p>	<ul style="list-style-type: none"> • The organization and function of the limbic system. • The organization and function of the cerebellum. • The organization and function of the brain stem. • The organization and function of the spinal cord 	<p>Reading: Chapter 4</p>
<p>Mid-Term Examination 1 - Mon June 6th, 9:00a-10:30a or 1:00p-2:30p or 7:00p-8:30p</p>			<p>Covers weeks 1-4</p>

Date	Topic/Focus	Learning Objectives By the end of the lecture, the student will be familiar with:	Required Preparation/ Learning Activity
Week 5 Week of June 6 th	The Peripheral Nervous System	<ul style="list-style-type: none"> • The organization and function of the afferent peripheral nervous system. • The basics of general sensory receptor physiology. • The fundamentals of transducing and perceiving visual information. 	<p>Reading: Chapter 5</p> <p>Learning Activity 4 Due June 19th, 11:59pm</p>
Week 6 Week of June 13 th	The Peripheral Nervous System cont'd	<ul style="list-style-type: none"> • The fundamentals of transducing and perceiving auditory information. • The fundamentals of transducing and perceiving the senses of taste and smell. • The organization and function of the efferent peripheral nervous system (ANS, SNS) 	<p>Reading: Chapter 5</p>
June 18-26	No Classes- Reading Week		
Week 7 Week of June 27 th	Muscle Physiology	<ul style="list-style-type: none"> • The structure of skeletal muscle. • The molecular basis of skeletal muscle contraction. • The mechanics of skeletal muscle force generation. 	<p>Reading: Chapter 8</p> <p>Learning Activity 5 Due July 10, 11:59pm</p>
Week 8 Week of July 4 th	Muscle Physiology	<ul style="list-style-type: none"> • ATP utilization and skeletal muscle fibre types. • The control of motor movement. • The structure and function of smooth and cardiac muscle. 	<p>Reading: Chapter 8</p>
Mid-Term Examination 2 - Mon July 11th, 9:00a-10:30a or 1:00p-2:30p or 7:00p-8:30p			Covers weeks 5-8

Date	Topic/Focus	Learning Objectives By the end of the lecture, the student will be familiar with:	Required Preparation/ Learning Activity
Week 9 Week of July 11 th	Cardiac Physiology	<ul style="list-style-type: none"> • The anatomy of the heart. • The electrical activity of the heart. • The mechanical events of the cardiac cycle 	Reading: Chapter 9 Learning Activity 6 Due July 24 th , 11:59pm
Week 10 Week of July 18 th	Cardiac Physiology	<ul style="list-style-type: none"> • The principal determinants of cardiac output and its control. • Blood supply to the heart. 	Reading: Chapter 9
Last Date to Voluntarily Withdraw from the Course: July 18, 2022			
Week 11 Week of July 25 th	Vascular Physiology	<ul style="list-style-type: none"> • The principles and determinants of blood flow and resistance. • The structure and function of the vascular tree and blood vessels. • The structure and function of arteries. 	Reading: Chapter 10 Learning Activity 7 Due Aug 7 th , 11:59pm
Week 12 Week of Aug 1 st	Vascular Physiology	<ul style="list-style-type: none"> • The structure, function, and control of arterioles. • The structure and function of capillaries. • The structure, function, and control of veins. • The principles and determinants of blood pressure and blood pressure regulation. 	Reading: Chapter 10
Final Examination - Date, time and location will be posted by Office of the Registrar Covers Weeks 1-12: Week 1-4=25%; Weeks 5-8=25%; Weeks 9-12=50%			Exam period Aug 13-22nd

Outline only, classes are subject to change on a weekly basis

Evaluation of Teaching-Instructional Feedback Survey (IFS) will take place online.

Course Evaluation Measures (it is suggested you print out this schedule)

Evaluation Method	Due Date	Weight
Mid-Term Examination1 Online via Blackboard	June 6, 2022	24%
Mid-Term Examination 2 Online via Blackboard	July 11, 2022	25%
Final Examination Online via Blackboard	Date and Time TBD	30%
Learning Activities (7 equally weighted @ 3%) Online via Blackboard	<ol style="list-style-type: none"> 1. May 15, 2022, 11:59pm 2. May 22, 2022, 11:59pm 3. June 5, 2022, 11:59pm 4. June 19, 2022, 11:59pm 5. July 10, 2022, 11:59pm 6. July 24, 2022, 11:59pm 7. Aug 7, 2022, 11:59pm 	21%

Evaluative activities are graded using the 100% scale. Final grades will be rounded to whole numbers. Mathematical rules for rounding will apply. In order to meet the BIOL 2040 course requirements, students must achieve at least 50%.

Other Important Dates:

May 23rd-Victoria Day-University closed (no office hours)

June 18-26-Reading Week-no classes

July 1st-Canada Day-University closed (no office hours)

July 18th-Last day to voluntarily withdraw from class

Aug 1st-Civic Holiday-University closed (no office hours)

Aug 10th-Last day of classes

Aug 13-22-Exam Period

Description of Course Evaluation Measures

A. Exams

In this course, you will write two mid-term examinations and one final exam. Exams will be done on Blackboard.

Midterm Examinations will be 50-70 questions in length. **They may be multiple choice, matching, ordering, image, fill in the blank or short answer.** You will have 90 minutes in which to write. These exams may be proctored online. Additional details about what to expect on each exam will be provided closer to the midterm date. To receive feedback regarding your midterm examinations please email me or the TA's for a virtual meeting.

Midterm Examination 1 (24%) will be written on **Monday June 6th**. **There will be three times in which you may write the exam: 9:00am-10:30am or 1:00pm-2:30pm or 7:00p-8:30pm.** There are three times so you can work around your schedule; **choose only one time.** You will only have one chance to write the exam. You do not have to let me know which time you are writing.

All course materials from Week 1 up to and including Week 4 may be testable content for midterm examination 1. This includes but is not limited to lecture content, required preparation materials (textbook chapter), power point presentations, and other resources provided online and/or assigned as self-study. The exam is closed book and must be completed independently (i.e. no assistance from other people, websites, course materials, etc).

Midterm Examination 2 (25%) will be written on **Monday July 11th**. **There will be three times in which you may write the exam: 9:00am-10:30am or 1:00pm-2:30pm or 7:00pm-8:30pm.** There are three times so you can work around your schedule; **choose only one time.** You will only have one chance to write the exam. You do not have to let me know which time you are writing.

All course materials from Week 5 up to and including Week 8 may be testable content for Midterm Examination 2. This includes but is not limited to lecture content, required preparation materials (textbook chapters, articles), power point presentations, and other resources provided online and/or assigned as self-study. The exam is closed book and must be completed independently (i.e. no assistance from other people, websites, course materials, etc).

Final Examination (30%)

The date, time, and location of the final examination will be posted by Office of the Registrar. You will have 1 hour 30 minutes in which to write. The exam will be done on Blackboard.

The final examination will cover all course content associated with Weeks 1 to 12 as follows: Weeks 1-4 (25%), Weeks 5-8 (25%), Weeks 9-12 (50%). The exam will include some questions that will integrate knowledge from more than a single unit. Material assessed includes but is not limited to lecture content, required preparation materials (textbook chapters, articles), power point presentations, and other resources provided online and/or assigned as self-study. The exam is closed book and must be completed independently (i.e. no assistance from other people, websites, course materials, etc). This exam may be proctored online. You will be provided additional details closer to the final exam date.

The Final Examinations will be 50-70 questions in length. **They may be multiple choice, matching, ordering, image, fill in the blank or short answer.** This exam may be proctored online. Additional details about what to expect on each exam will be provided closer to the exam date.

Learning Activities (21%)

In this course, you will have the opportunity to complete 7 learning activities that are worth 3% each for 21% of the total course grade. Learning activities may assess readings, course content or other learning outcomes. They may involve activities such as minute papers, case studies, quizzes, or other activities designed by the course instructor

Learning activities will be assigned in most, but not all, weeks. There will be no other opportunities to participate in the learning activities other than the time at which they are presented. Due dates are listed on pages 4-7. Some activities will be timed assessments, that is, once you have begun, you have a set amount of time in which to finish. Read all instructions carefully before you begin and plan accordingly.

Learning activities that have not been completed and submitted will receive a zero grade. If you are unable to complete the activity, you must notify the instructor prior to the due date for alternate arrangements to be considered.

Expectations of Students Related to Policies

It is a shared faculty and student responsibility to be aware and comply with all policies, procedures, and by-laws of the program and academic institution.

You are advised to review all policies. If you do not abide by the principles, rules, and regulations of these documents, disciplinary consequences may result. Sanctions and consequences apply to all students. Students who are not in good standing will not be afforded the privileges associated with university rights and freedoms.

Important University of Windsor Policies

1. Student Code of Conduct located at:
http://www.uwindsor.ca/secretariat/sites/uwindsor.ca.secretariat/files/student_code_of_conduct_october_18_2016.pdf
2. Academic Evaluation Procedures located at:
http://www.uwindsor.ca/secretariat/sites/uwindsor.ca.secretariat/files/bylaw_54_-_undergraduate_academic_evaluation_procedures_amended_190510.pdf
3. Senate Policy on Conduct of Tests and Exams located at:
http://www.uwindsor.ca/secretariat/sites/uwindsor.ca.secretariat/files/conduct_of_exams_and_tests_amended_sa161111.pdf
4. Senate Bylaw 31 Academic Integrity at:
http://www.uwindsor.ca/secretariat/sites/uwindsor.ca.secretariat/files/bylaw_31_-_academic_integrity_amended_181214.pdf.
5. Policy on Academic Accommodation for Students with Disabilities at:
http://www.uwindsor.ca/secretariat/sites/uwindsor.ca.secretariat/files/academic_accommodation_for_students_with_disabilities_amended_july_17_2017.pdf
6. The Senate Student Code of Conduct for the definition of plagiarism located at:
http://www.uwindsor.ca/secretariat/sites/uwindsor.ca.secretariat/files/student_code_of_conduct_october_18_2016.pdf
7. **Policy on Intellectual Property** Lectures and course materials prepared by the instructor are considered by the University to be an instructor's intellectual property covered by the Copyright Act, RSC 1985, c. C-42 (<https://laws-lois.justice.gc.ca/eng/acts/c-42/index.html>). Course materials

such as PowerPoint slides, lecture recordings etc are made available to you for your own study purposes. These materials cannot be shared outside of the class or “published” in any way. Posting recordings or slides to other websites eg Course Hero, without the express permission of the instructor may constitute copyright infringement.

Course Policies

1. **Missed Tests:** Students must inform the professor of their absence prior to the start of any test or exam. Failure to do this may result in a zero grade on the test or exam. Students may apply for consideration of an alternate test writing date based on certain criteria. If a makeup is arranged (and this is rare), it may differ in format from the original test (i.e., will probably, though not necessarily, include more written answer questions).
2. **Scheduling Conflicts for Term Tests:** Three or more midterms within 24 hours constitute a conflict. Please let me know as soon as possible (at least 2 weeks prior to the conflict time), so that alternative arrangements can be discussed. Note: Two midterms (or two final exams) on one day is NOT a conflict (unless they actually overlap).
3. **Examinations/quizzes in this course are protected by copyright.** Reproduction or dissemination (sharing) or possession of examinations or the contents or format of examinations/ quizzes in this course or in any previous offering of this course in any manner whatsoever (e.g., sharing content with other students), without the express permission of the instructor, is strictly prohibited. Students who violate this rule or engage in any other form of academic dishonesty will be subject to disciplinary action under Bylaw 31.
4. **Final Exam Conflicts: Final exam conflicts must be brought to the attention of the Registrar's Office once final exam dates/times are posted.** (This must be done shortly after the final exam times are made available.)
5. **Remarking Of Tests/Exams:** If you believe that a written answer on a test was marked incorrectly, you can provide your rationale and paper for remarking **within 1 week of the test being made available to you.** (This is only relevant if written answer questions are used.) Note: Remarking can result in the mark being raised, confirmed or lowered.
6. **Discussion of Marks/Grades:** In order to be fair and consistent with regards to the entire class, individual grades are **not** negotiable. Once grades are posted, there will be no further changes (including “rounding up”) aside from error corrections. It is not possible to provide opportunities for “extra credit” assignments to all students, and it is not appropriate to provide such assignments to individuals. **If there is a clear error in your mark (calculation, clerical, etc.) contact me as soon as possible.** It is unlikely that you will receive a response regarding any other mark-related queries.
7. **Use of SafeAssign® Plagiarism-Detection Software in This Course:** The University believes in the right of all students to be part of a University community where academic integrity is expected, maintained, enforced, and safeguarded; it expects that all students will be evaluated and graded on their own individual work; it recognizes that students often have to use the ideas of others as expressed in written, published, or unpublished work in the preparation of essays, papers, reports, theses, and publications. However, it expects that both the data and ideas obtained from any and all published or unpublished material will be properly acknowledged and sources disclosed. Failure to follow this practice constitutes plagiarism. Students may not use papers or assignments written by them for any previous course without the permission of the instructor. Doing so is considered plagiarism according to ByLaw 31.

SafeAssign® plagiarism-detection software may be used for some or all student assignments in this course, at the instructor's discretion. You will be advised how to submit your assignments. Note that students' assignments that are submitted to the plagiarism-detection software become part of the database. SafeAssign® plagiarism-detection software use of student work complies with Canadian copyright and privacy laws. However, you also have the right to request that your paper(s) not be run through the student papers database. If you choose to do so, that request must be communicated to me in writing at the beginning of the course, and as an alternative, you must submit your final work along with extensive documentation (dated printouts of your literature/library searches, hand-written and typed drafts, and photocopies of all references).

8. **Forum Code of Conduct.** Students are encouraged to participate in online forums to discuss course concepts, organize study groups, and ask questions relating to microbiology. In my experience, the discussion on course forums has typically been polite and respectful, and I hope this will continue. Students are expected to follow the code of conduct in use of the forums:
- i. Check to see if your question has already been posted. (You can search the forums – you don't have to read each post!)
 - ii. Use a clear, informative subject line. Try to be as specific as possible.
 - iii. Post comments appropriate to the particular discussion. Off-topic posts may be moved or deleted.
 - iv. Be respectful. Posts containing personal insults/attacks/intimidation/profanity will be deleted. (It is also worth remembering that your instructor reads forum posts!)
 - v. Post only material relevant to the course/microbiology. Other posts are likely to be deleted.
 - vi. While it is appropriate to engage in debate/discourse on biological topics, such discussions should be respectful and evidence-based. Evidence should be from trusted sources – consult with the library or your instructor if you are not sure! (See: <http://www.yorku.ca/webclass/module4a.html>)
 - vii. Any posts which appear to violate our code of conduct may be edited, moved to a hidden forum or deleted at the discretion of instructors/moderators. If posts give indications of violations of academic honesty or the University student code of conduct, further action will be taken.

The University of Windsor sits on the traditional territory of the Three Fires Confederacy of First Nations, which includes the Ojibwa, the Odawa, and the Potawatomie. We respect the longstanding relationships with First Nations people in this place in the 100-mile Windsor-Essex peninsula and the straits - les détroits - of Detroit.