Applied Human Biology I
BIOL 1853 FA01/1850L FA01, 02, 03 and 04

Lectures: Dr. Wasundara Fernando (she/her/hers)
Office: BIO 310
Office hours: M 10:30 am – 12:00 pm
E-mail: wasundara.fernando@acadiau.ca

Lecture: Huggins Science Hall, HSH 010
MWF 9:30-10:20 am

Please check My Acadia/ Self-Service for assigned classrooms, as they may change in the first week of classes.

Labs: Dr. Wasundara Fernando (she/her/hers)
Office: BIO 310
Office hours: M 10:30 am – 12:00 pm
E-mail: wasundara.fernando@acadiau.ca

Lab: HSH 202/206
FA01 Monday 1:00 – 3:50 pm (HSH 202)
FA02 Wednesday 1:00 – 3:50 pm (HSH 202)
FA03 Friday 1:00 – 3:50 pm (HSH 202)
FAI04 Friday 1:00 – 3:50 pm (HSH 206)

Office hours are reserved for you to come and talk to me, ask questions, share stories, or simply say hi. I am here to assist you! If the time listed above does not fit with your schedule, please email me to set up an appointment.

Part 1: Course Information

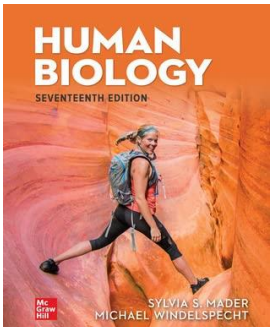
Course Description

The human body is an incredibly complex machine that works through the intricate coordination of different systems at the cellular, tissue and organ levels. The focus of this course is to provide a superficial introduction (breadth not depth) to the structure and function of the major systems in the human body. This semester we will begin at the microscopic level by looking at cell structure and tissue. We will then move on to look at whole organ systems, with detailed examinations of the integumentary, cardiovascular, respiratory, digestive, and urinary systems.

Prerequisite(s)

There is no prerequisite(s) for this course.

Course Materials & Requirements



- Recommended textbook: Human Biology by Sylvia Mader and Michael Windelspecht (seventeenth edition), McGraw-Hill Education. Earlier editions and used textbooks should also work.
- The textbook is recommended (not required) and will provide further reading if you are interested in. All material for tests and examinations will be taken directly from lecture notes and other reading material provided to you during lectures and labs.
- Lectures and labs for this course have separate MOODLE pages.

- A tablet or laptop with internet access for quizzes and examinations. This is mandatory as all examinations will take place in class but online.
- Vaughan Memorial Library's Biology LibGuide

Course Structure

Lecture:

- Lectures will be in person and lecture material will be presented in 50 min lecture slots.
- Lectures will take place in HSH 010 - MWF 9:30 am - 10:20 am.
- Lecture slides will be made available on the lecture MOODLE page.
- I will not be recording or live-streaming lectures, and students are expected to attend all lectures in-person.

Lab:

- Biweekly labs will be in person in the Huggins Science Hall in room HSH 202 (FA01, 02 and 03) or 206 (FA04).
- Labs will begin in the week of September 09, 2024.
- Materials for the scheduled labs will be posted on the lab MOODLE page. Printed copies of lab handouts will be provided for you on your lab day.
- Other handouts and links of interest will also be posted on the lab MOODLE page.

Learning Outcomes

This course establishes the foundation and knowledge required for several upper year courses. Lectures and labs are integrated and together, will help you:

1. Identify the major regions of the human body.
2. Understand and use proper anatomical directional terminology.
3. Understand the hierarchical nature of the human body.
4. Understand the inner workings of a cell and the different types of tissue.
5. Identify the major anatomical features and the basic physiology of the integumentary, cardiovascular, digestive, respiratory, and urinary systems.

How to meet the Learning Outcomes?

1. Attend lectures on a regular basis, take notes, and ask for clarification when something is unclear.
2. Please ask questions in class, but if you'd prefer, email or come and meet me during my office hours.
3. Attendance to labs is mandatory.
4. Study on a regular basis. Keep up with the weekly lecture quizzes- they are designed to help you review and keep up to date. Lecture evaluation will be via online quizzes, two

tests, and one final exam.

5. Laboratory evaluation includes lab reports and assignments, and lab skills evaluations.

Part 2: Course Plan

The instructors reserve the right to amend the course plan with reasonable notice.

Lecture:

Date	Topic
Section 1: Chemical and Molecular Foundations of Life	
Sep 4 – Sep 6	Introduction to BIOL 1853; The Characteristics of Life
Sep 9 – Sep 13	Science as a Process; Atoms and Molecules; Molecules of Life
Sep 16 – Sep 20	Lipids and Carbohydrates; Nucleic Acids; Proteins
Section 2: Organization of the Human Body	
Sep 23 – Sep 27	Review before Test 1; **Sep 25 - Test 1**; Organization and Structure of the Cell
Sep 30 – Oct 4	**Sep 30: National Day for Truth and Reconciliation – No classes**; Biomembranes; Cytoskeleton and Cell Movement
Oct 7 – Oct 11	Cellular Metabolism; Tissues and Organ Systems and Test 1 Review; Connective Tissue
Oct 14 – Oct 18	**Oct 14: Thanksgiving Day; Oct 15-18: Fall study break - No classes.**
Oct 21 – Oct 25	Muscular and Nervous Tissues; Oct 23: Self review in-class activity; Epithelial Tissue
Section 3: Maintenance of the Human Body	
Oct 28 – Nov 1	Review before Test 2; **Oct 30 - Test 2**; The Integumentary System
Nov 4 – Nov 8	The Cardiovascular System – Heart and Blood Vessels; The Cardiovascular System – Blood; Lymphatic System
Nov 11 – Nov 15	**Nov 11: Remembrance Day – No classes**; Biology of Infectious Diseases; Test 2 Review
Nov 18 -Nov 22	The Digestive System and Nutrition; The Accessory Organs; The Respiratory System – Structure
Nov 25 – Nov 29	The Respiratory System – Function; The Urinary System – Structure; Course Review – 1
Dec 2 – Dec 4	The Urinary System – Function; Course Review – 2

Lab:

Please check your schedule on Self Service or MOODLE to confirm your lab section.

Section	Day and Time
FA01	Monday 1:00 – 3:50 pm
FA02	Wednesday 1:00 – 3:50 pm
FA03	Friday 1:00 – 3:50 pm
FA04	Friday 1:00 – 3:50 pm

This is the schedule of the lab exercises for this semester.

Dates	Topic
Sep 9, 11, 13 Sep 20	Introduction to BIOL 1850L Labs
Sep 23, 25, 27 Oct 4	Histology and The Integumentary System
Oct 7, 9, 11 Oct 25	The Cardiovascular System
Oct 28, 30, Nov 1 Nov 8	The Digestive and Respiratory Systems
Nov 13, 15 Nov 18, 22	The Urinary System
Nov 25 1:00 pm	Lab exam – FA01
Nov 27 1:00 pm	Lab exam – FA02
Nov 29 1:00 pm	Lab exam – FA03
Nov 29 2:30 pm	Lab exam – FA04

Part 3: Assessment and Grading

	Evaluation	Percentage	Date
Lecture (70%)	Quizzes	10%	Weekly
	Test 1	15%	Sep 25
	Test 2	15%	Oct 30
	Final (Cumulative)	30%	December exam period
Labs (30%)	Lab reports and assignments	25%	Biweekly
	Lab exam	5%	Nov 25, 27 and 29

Lecture (70% of final grade):

1. Weekly quizzes (10%) - Weekly quizzes integrate lecture and reading material. Quizzes will be made available to you on MOODLE (online) at the beginning of the relevant week. The number of attempts is unlimited, and the quizzes can be completed at any time within the next two weeks. They will not be re-opened once they are closed.
2. Test 1 and 2 (15% each) – The in-class tests will be written in the lecture time and classroom unless you are registered with the Accessibility Services. If you have to miss a test, you need to contact me before the test. Missed tests without a valid reason will result in 0%. Make-up tests will not be provided. Both tests are closed book exams.
3. Final Exam (30%) - This cumulative exam is based on lecture material. Material from guest lectures will be on the final exam. The exam will be written in the April exam period. It is a closed book exam.
4. If you are registered with Accessibility Services, appropriate accommodation will be made for in-class tests and the final exam.

Lab (30% of final grade):

You are required to pass the lab to pass the course. Labs are mandatory, you cannot hand in any assigned work without attending the lab.

1. Labs are every other week unless indicated otherwise on Moodle.
2. Please refer to the lab schedule posted on the lab Moodle page to make sure you attend the correct lab days. You must also bring a computer or tablet to each lab.
3. We will be doing several dissections of fresh and preserved organs, so wear a protective lab coat on those days.
4. A lab report and a lab assignment need to be completed for each lab. Before leaving each lab, you will be required to submit your assignment in pdf format to the lab Moodle page. Confirm your submission with your TA before leaving each lab.
5. Lab skills will be assessed at the end of all the labs for a total of 5%. Labs are generally completed in groups but to grasp lab concepts and perfect technical skills each student must contribute to all experiments and practice lab techniques.

Part 4: Course Policies

***Studies have shown that students who take notes by hand (rather than typing on a computer) perform significantly better in their ability to retain information. While you are permitted to use laptops or tablets to take notes in lecture, please limit their use to classroom material only. Using them for other purposes (i.e. social media) will negatively impact your ability to learn, and it is distracting to myself and others. If your use of electronic devices becomes a distraction to me or others, you will either be asked to put your device away or to leave the classroom.

Lectures and labs will be delivered in-person. In the event of a campus closure (e.g., due to weather) or a change in the public health situation, the lectures and labs may be moved on-line. You will be notified via e-mail and MOODLE in the event of a change in delivery mode.

Lecture:

Students are expected to attend all classes sessions in person.

Make-up tests for either absence, or poor performance, will not be provided as an option. In the event that you have a valid excuse for missing either of the tests, the weight from the missed test will be distributed to the final exam. If you are going to miss a test, it is your responsibility to let me know before the exam. Missed test(s) without a valid excuse will result in a mark of zero. University policies on missing classes, etc. can be found here:

https://registrar.acadiau.ca/RecordsandOtherRequests.html

Lab:

All labs are in person. If for any reason you are unable to attend your regular lab session, notify me ahead of time to reschedule into an available lab slot. Some labs are full. Grades for missed labs will not be re-allocated and redistributed to other labs unless a valid excuse has been provided.

It is your responsibility to bring printed copies of each lab handout on lab day. You are responsible for uploading the lab reports/assignments for each lab before the deadline.

Part 5: University Policies

University policies are available in the Acadia University Academic Calendar or through the Registrar's website: https://registrar.acadiau.ca/welcometotheregistrarsoffice.html

Equity, Diversity and Inclusion

Acadia University is committed to becoming a culturally safe and anti-oppressive community. This can only be achieved where there are simultaneous efforts to eliminate all forms of discrimination and harassment from our campus community, including the elimination of all discrimination, harassment and violence based on one's identity, including but not limited to, gender, race, class, ethnicity, sexual orientation, disability, gender identity, gender expression, and Indigeneity. The policy against harassment and discrimination, and resources for students who believe they may have experienced, or witnessed, discrimination or harassment, are available here: https://www2.acadiau.ca/student-life/equity-judicial/equity.html

Last Drop Day

Last day to drop a course and receive a "W". Please check the Acadia University calendar dates, which are available here: https://registrar.acadiau.ca/AcademicCalendars.html

Inform Your Instructor of Accommodations

Acadia University is dedicated to improving access to campus life for all students with disabilities. While we attempt to ensure that all courses are accessible, we recognize that there are barriers that need to be addressed on an individual basis. Students who require accommodation to complete coursework or otherwise fully participate in class should contact Accessible Learning Services directly as soon as possible. https://www2.acadiau.ca/student-life/accessiblelearning.html

The Use of Animals in Teaching and Research

The use of animals in teaching and research at Acadia University is done in accordance with guidelines on the care and use of animals published by the Canadian Council on Animal Care (CCAC). For more information on the CCAC, please visit their website at http://www.ccac.ca

Commitment to Integrity

It is standard practice in Biology to check exams and assignments for cheating and plagiarism. Cheating in the class and/or lab, including plagiarism, will not be tolerated. Please read the appropriate sections of the current Acadia University Academic Calendar: https://registrar.acadiau.ca/AcademicCalendars.html

Information on copy-write and course content from Acadia University is available through the Vaughan Memorial Library: http://libguides.acadiau.ca/c.php?g=433650&p=5027078

The spoken and written course content (including the syllabus, handouts, lectures, presentations, labs, assignments, quizzes, tests, and exams) are the intellectual property of the instructor and may only be copied for personal use. Sharing these materials or uploading them

where they may be accessed by others is a violation of copyright. If you wish to make audio, video, or photographic recordings in class, you must first obtain the consent of the instructor and of any other persons (e.g., guest speakers, other students) who may be captured in such recordings. In the case of personal use by students with disabilities, the instructor's consent shall not be unreasonably withheld.

Part 6: Program Learning Outcomes

The Biology Department maps Program Learning Outcomes (PLOs) in each course throughout our program in order to align content and skills across courses. As BIOL 1853 is a first-year course, PLOs here will be Introduced; in upper-level courses, some of these will be Reinforced or indicated as Proficient as you develop advanced skills in upper-level courses. All PLOs do not apply to all courses but represent the entire program.

Foundations of knowledge		**Course specific examples**	**Proficiency** 1-Introduction 2-Reinforcement 3-Proficient
Scientific method, inquiry and hypothesis testing	Find, understand, explain and apply information from the literature; understand how to use the scientific method to examine problems from different perspectives.	Explain the scientific process and the scientific method, data analysis and presentation, scientific writing, and use of citations.	1
Chemical and molecular foundation of life	Explain the chemical and molecular building blocks of life.	Review macromolecules and learn scientific process.	1
Organization of the human Body	Describe the structure and organization of cells, tissues and organ systems.	Introduce the structure and function of the cell. Explain the organization of tissues and types of tissues.	1
Maintenance of the human Body	Explain how the human body is maintained, and the main components/organ systems involved in human body maintenance.	Explain the structure and functions of integumentary, cardiovascular, lymphatic, digestive, respiratory and urinary systems.	1
Lab and field skills			
Experimental design	Gain experience in applying the scientific method.	Learn about hypothesis testing and conduct a	1

		simple experiment and analyze shared data.	
Safety	Work safely and productively in lab settings.	Basic lab and field skills, independent and group work.	1
Lab skills	Gain experience with basic and advanced lab techniques and understand their application in research, health science and industry	Learn basic lab skills including microscopy, pipetting, and dissecting.	1
Data acquisition, analysis and interpretations	Collect data, present results both qualitatively and quantitatively, and interpret outcomes in light of the literature	Generate images of various tissues and organs and identify specific microscopic and macroscopic structures in them.	1
Professional skills			
Ethical practices	Demonstrate ethical conduct, apply principles of academic integrity, and understand the principles of EDI in science	Ethical practices and accountability in both independent and group work.	1
Collaboration and group work	Work effectively in groups within and across disciplines	Small group work in the lab, within discipline.	1
Critical thinking	Analyze and evaluate information to make science-based decisions	Lecture and lab, in practical work and assessments.	1
Computer proficiency	Use common and discipline-specific software	MS Word, Excel, PowerPoint and also MOODLE.	1
Scientific communication	Communicate science effectively to both scientific and general audiences	Iterative writing of lab reports, with opportunity for feedback and developing skills.	1

Acadia is a scent-free and smoke-free campus. Everyone on campus should refrain from wearing scented products such as perfume/cologne/after-shave/hair spray etc. Violation of this policy could lead to your removal from class/lab/tutorial and potential academic penalties because of missed work.