UNIVERSITY OF MANITOBA – DEPARTMENT OF BIOLOGICAL SCIENCES

BIOL1410 Anatomy of the Human Body (3 CH)
Sections A01-A06

COURSE SYLLABUS

September 2025

UofM Course Calendar Description

(Lab Required) Microanatomy and gross anatomy discussed, including changes occurring from conception to old age. Although this course may be used as an elective in an Arts or Science program, it may not be used to meet a program requirement of an Honours or Major program in the Biological Sciences. May not be held with BIOL 1411. No prerequisite. High school Biology strongly recommended.

General Course Description

This course is designed to prepare students for entry into health related undergraduate or professional programs (nursing, kinesiology, physiotherapy, occupational therapy, dental hygiene, etc.) and future careers in healthcare. It is also intended for students interested in learning about the structure of the human body. The course introduces anatomy at all levels including cellular, histological, and gross anatomy.

Course Goals

This course will introduce you to the anatomical terminology used to refer to microscopic and macroscopic structures that, together, form the human body. The general relationships between anatomical structures (cell, tissue, organ, and organ systems) and some aspects of their development will also be introduced.

Course Learning Outcomes

At the end of this course you should be able to:

1. Locate, identify, and describe anatomical structures and their orientation in the human body using the appropriate terminology.
2. Describe the levels of organization in the human body and explain the interrelationships among molecular, cellular, tissue and organ levels in each organ system.
3. Integrate knowledge from microscopic and macroscopic levels of organization to form a holistic view of the human body.
4. Work collaboratively in diverse teams and use critical thinking to gather, synthesize, and evaluate anatomical information.

Instructors

Office hours: TBA by each lecturer in their first class - appointments suggested.
Email contact with instructors must be via your U of M email account (@myumanitoba.ca) and please keep communications professional. Instructors will try to respond to electronic inquiries within two business days of receiving the inquiry, but the reply may be sooner or in some instances later than this.

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Course & Laboratory Coordinator

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Laboratory Technician

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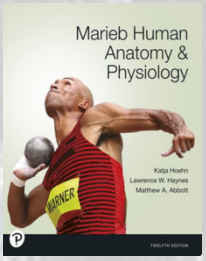
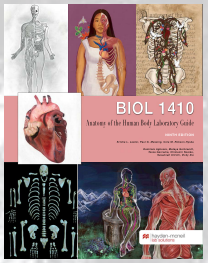
Required Texts

1. Marieb Human Anatomy & Physiology, 12th Edition by Katja Hoehn, Lawrence Haynes, and Matthew Abbott (Publisher: Pearson).
    - **Select 1 of the 3 purchase options** below:
        a. $119.95 Pearson eText with Mastering & AI Study Tool (24 month access) includes:
            - AI e-text (take notes, highlight, search, audiobook feature, language translation)
            - Study area with learning tools and questions to help you understand concepts
        b. $77.99 Pearson eText with AI Study Tool (12 month access)
            - Same as above with a shorter access time
        c. $96.50 Lifetime eText (AI Not Available)

        Learn About the AI Tutor and Translation Feature in your eText here



2. BIOL 1410 Laboratory Guide 9th Edition – by Kristie Lester, Paul Messing, and Cole Robson-Hyska
    - Lab workbook (hard copy only) available for purchase at the Fort Garry Campus Bookstore



Accessing E-Text & Mastering A&P

The link to access the e-text and Mastering A&P is available through UM-Learn for the lab.

To access the textbook do the following:

1. Go to UM-Learn for the Lab.
2. Click the "Content" menu.
3. From the table of contents, click "Pearson E-text and Mastering A&P link".
4. Click the "Pearson LTI 1.3" link. Note, if you have previously purchased and used the textbook during BIOL2410, you may need to clear your cache and cookies before this step in order for it to work properly.

5. Sign in if you have used a Pearson product before OR create a new account
6. If you have purchased your text new, select **Redeem the access code** and enter the access code you received with your purchase at the bookstore. If you already have purchased access, enter your login information.
7. From the "You're Done" page, select **"Go To My Courses"** to start your course.
8. From now on, you can access the e-text and Mastering A&P through the Pearson LTI 1.3 link in UM-Learn, or though the Pearson+ app.

Optional Anatomical Atlases

You may find the following resources useful for helping you to visualize and identify structures and their relationships for laboratories and lectures.

Books:

1. A photographic atlas for Anatomy and Physiology. Hebert, Heisler et al. (Pearson)*
   *A few copies will be available during labs. Also found on Pearson website, Amazon or resale market

Smart Device Apps (paid): (available in Apple App Store or Google Play Store)

1. Complete Anatomy 2024 by 3D4 Medical
2. Human Anatomy Atlas by Visible Body

Smart Device or Computer Apps (free):

1. Anatomy Learning – 3D Interactive Anatomy Smart Device App
2. Anatomy Learning – 3D Interactive Anatomy Web Browser - https://anatomylearning.com/webgl2024v2/browser.php

Important Dates and Notices

September 16th – 19th	– Anatomy labs begin
September 16th	– Last date to drop a class during the revision period
September 17th	– Last date to add a class during the revision period
September 30th	– No Classes, National Day for Truth and Reconciliation (Observed)
October 13th	– No Classes, Thanksgiving
November 10th to 14th	– No Classes/Labs, Remembrance Day and Fall Term Break
November 18th	– Last day for voluntary withdrawal
December 8th	– Last day of classes

Schedule of Lectures

Your lecture details (dates, times, and rooms) are listed in your schedule on Aurora (aka "Week at a Glance"). Please attend the lecture slot in which you are registered..

Schedule of Laboratories

Your laboratory details (date, time, and room) are listed in your schedule on Aurora (aka "Week at a Glance").
Location of Laboratories: Biological Sciences Building (BSB), rooms 211 and 223.
To help you find the right room, on the day of your first lab, a class list will be posted on the lab room doors.
Labs will run on the following weeks (attend lab on the day and time of your registered section, each week).

LABORATORIES BEGIN THE WEEK OF SEPTEMBER 16th - 19th

Lab 0 – Sept. 16th – 19th	Lab 3 – Oct. 14th – 17th	No Lab – Nov. 11th – 14th
Lab 1 – Sept. 23rd – 26th	Lab 4 – Oct. 21st – 24th	Lab 6 – Nov. 18th – 21st
No Lab – Sept. 30th – Oct. 3rd	Lab 5 – Oct. 28th – 31st	Lab 7 – Nov. 25th – Nov. 28th
Lab 2 – Oct. 7th – 10th	LAB EXAM – Nov. 4th – 7th	Lab 8 – Dec. 2nd – 5th

Course Evaluation and Examination Dates

Lecture Midterm #1 (60 minutes) **15%**

Monday October 6th, 6:30pm – 7:30pm. Location TBA

30 multiple choice questions

- covers material from intro to the end of the unit on tissues

Laboratory Exam **20%**

Week of Nov. 4th to Nov. 7th, Time: [your lab time]. Location: [your lab room]

Identification Exam (40 stations, 70 multiple choice questions)

- covers labs 1-5
- identification of anatomical structures on anatomical models/slides/charts

Lecture Midterm #2 (60 minutes) **20%**

Monday November 3rd, 6:30pm – 7:30pm. Location TBA

35 multiple choice questions

- 5 questions from midterm 1 material
- 30 questions covering material from body cavities/membranes to the end of the lymphatic system

Final Exam (2 hours) **45%**

Date and time TBA by Student Records

80 multiple choice questions

- *Lecture (60 questions)*: Cumulative but weighted to material from second half of course: 10 questions cover from intro to end of lymphatic system, 50 questions from respiratory to end of special senses)
- *Lab (20 questions)*: Covers labs 6, 7, and 8 only.

Grading Scheme (Department of Biological Sciences

Letter Grade	Percentage (out of 100)	Final Grade Point
A+	90 – 100	4.5
A	80 – 89	4.0
B+	74 – 79	3.5
B	68 – 73	3.0
C+	62 – 67	2.5
C	56 – 61	2.0
D	50 – 55	1.0
F	0 – 49	0.0

The minimum grade students must earn in order to take BIOL1412: Physiology of the Human Body is "C" (shown in bold red). These grade intervals are subject to change, depending on the sum of the results of all examinations. Any changes to the grading scheme will not be to the detriment of the student.

Lecture/Lab Outline and Suggested Readings

The following is an **approximate** outline of the topics to be covered each week in lecture (some lecturers may be ahead of or behind this schedule depending on how they choose to pace their class). Textbook references for each topic are listed, however **these are not required readings**. Suggested reference pages from Marieb Human Anatomy and Physiology, 12th ed. by Katja Hoehn, Lawrence Haynes and Matthew Abbott are given in **bold** (pages for the 11th edition are in brackets).

Note:

1. Lecture exams are based primarily on information discussed in lectures, so you should ***focus your studying on the class lecture notes.***
2. The textbook pages listed below can be used for better understanding of lecture notes and visualizing structures in diagrams. But passages should be read, bearing in mind, that the pages contain more information than what is covered in lecture. ***These are not required readings.***

WEEK	LECTURE UNITS	TEXTBOOK PAGE REFERENCES bold numbers = 12th Edition; brackets = 11th Edition	LABS//EXAMS
Week 1 (Sept. 3rd – 5th)	1. Introduction to Human Anatomy 2. Chemical Level of Organization	**2-5; 12-20** (2-5; 12-20)**:** definitions, levels of organization, anatomical position, directional terms **25-28** (25-26)**:** atomic structure **31-34** (32-33)**:** ionic and covalent bonds **38** (38-39)**:** inorganic compounds	**NO LAB**
Week 2 (Sept. 8th – 12th)	2. Chemical Level of Organization 3. The Cell	**39-40** (39-40)**:** acids, bases, pH **41-56** (41-51; 53-56)**:** organic compounds **60-66; 83-96** (61-66; 83-96): cell structure	**NO LAB**
Week 3 (Sept. 15th – 19th)	4. The Cell Cycle, Mitosis, Meiosis 5. Early Development 6. Heredity	**96-98** (92-98)**:** cell cycle and mitosis **1051-1055; 1136-1137** (1043-1047; 1125-1128)**:** meiosis & crossing over **1101-1112** (1092-1102) **1134-1140** (1125-1130)	**Lab 0:** Introduction to Anatomy Labs; Meet your teaching assistants and lab partners
Week 4 (Sept. 22nd – 26th)	7. Histology 8. Body Cavities & Membranes 9. Integumentary System	**67-68** (67-68)**:** cell junctions **115-140** (116-142)**:** tissues **17-19** (17-19)**:** body cavities **141-142** (133-135)**:** cutaneous, mucous, serous **150-164; 489-491** (150-163; 491-492)	**Lab 1:** Cytology, Cell Division and Early Stages of Development

Week 5 (Sept. 29th – Oct. 3rd)	10. Skeletal System	**199-227** (199-227)**:** axial skeleton **227-245** (227-245)**:** appendicular skeleton **174-175; 176-184** (174-175; 176-184)**:** bone tissue **251-272** (251-272)**:** joints/articulations	**NO LAB**
Week 6 (Oct. 6th – 10th)	11. Muscular System	**324-385** (324-385)**:** skeletal muscles **280-289** (280-289)**:** muscle tissue	**Lab 2:** Histology and Skin *****MIDTERM EXAM #1***** ***(Monday Oct. 6th, 6:30pm-7:30pm).***
Week 7 (Oct. 14th – 17th)	12. Cardiovascular System	**671-685** (671-685)**:** heart anatomy **738-741**; **752-753**; **1117-1119** (736-739; 750-751; 1107-1109)**:** blood vessels **707-715** (707-714)**:** blood vessel anatomy **642-646**; **651-654**; **657** (642-646; 651-654; 657)**:** blood	**Lab 3:** Microanatomy of Bone and Cartilage; Bones of Skull, Cervical Vertebrae; Facial Muscles and Movement of the Head.
Week 8 (Oct. 20th – 24th)	13. Lymphatic System 14. Respiratory System	**767-778** (766-776) **822-838** (818-834)	**Lab 4:** Bones and Muscles of the Pectoral Girdle, Thoracic Cage and Upper Limb
Week 9 (Oct. 27th – 31st)	15. Digestive System	**875-889; 890-893; 899-905; 906-909; 912-915; 746; 748-749; 757-758; 914** (869-883; 884-887; 893-899; 900-903; 906-909; 744; 746-747; 756-757; 908)	**Lab 5:** Bones and Muscles of the Pelvic Girdle, Lower Limb and Abdominal Region
Week 10 (Nov. 3rd – 7th)	16. Urinary System	**979-988; 1010-1012** *(974-983; 1002-1004)*	*****MIDTERM EXAM 2***** ***(Monday Nov. 3rd, 6:30pm-7:30pm)*** *****LABORATORY EXAM***** *(during your usual lab day/time)*
Week 11 (Nov. 10th – 14th)		*****FALL BREAK – NO LECTURES OR LABS*****	
Week 12 (Nov. 17th – 21st)	17. Reproductive Systems	**1052; 1056-1062; 1063-1067; 1069-1075; 1077** (1047-1053; 1054-1058; 1060-1066; 1068)	**Lab 6:** Muscle Tissue, Cardiovascular System in Thoracic Region (Heart Dissection) and the Respiratory System ****VW DAY = Nov. 19th****
Week 13 (Nov. 24th – Nov.28th)	18. Endocrine System	**601-603; 609-613; 617-618; 621-623; 627; 630; 634-635** (601-603; 609-613; 617-618; 621-623; 627; 630; 634-635)	**Lab 7:** Systems in the Abdominopelvic Cavity; Rat

	19. Nervous System	**391-399; 412-415** (391-399; 412-415)**:** nervous tissue **434-456; 462-465; 742-743; 468-477**; (436-458; 464-467; 740-741; 470-479)**:** nervous system brain and spinal cord	Dissection
Week 14 (Dec. 1st – 5th) & Dec. 8th	19. Nervous System 20. Special Senses	**487-491; 494- 513** (489-493; 496-515)**:** peripheral nervous system (nerves) **530-541** (532-542)**:** autonomic nervous system **475-479** (477-481): neuronal pathways **554-555; 558-563; 580-585** (554-555; 558-563; 580-585)	**Lab 8:** Nervous System

Lecture Topics

The approximate number of lecture hours in each topic are given in brackets.

1. Introduction to Anatomy (1 hr)
    1. Anatomy: subdivisions, methods of study
    2. Levels of organization: cell to organism
2. Chemicals in living matter (2 hr)
    1. Atoms; ions
    2. Inorganic compounds: water, acids, bases; pH
    3. Organic compounds: carbohydrates, lipids, proteins, nucleic acids
3. The cell (1 hr)
    1. Microanatomy of the cell: cell (plasma) membrane, cytoplasm, organelles
4. The cell cycle: Mitosis and Meiosis (1 hr)
    1. Interphase (G_1, G_0, S, G_2).
    2. Cell division (mitosis, meiosis, cytokinesis).
5. Early Human Development (1 hr)
    1. Stages of development from zygote to embryo to fetus
6. Inheritance (Genetics) (1 hr)
    1. Definitions (dominant, recessive, homozygous, heterozygous, genotype, phenotype, etc.)
    2. Chromosomes
    3. Punnett squares and probabilities
    4. Sex-linked inheritance
7. Tissues (1.5 hr)
    1. Cell junctions
    2. Epithelium: general features, specific types
    3. Connective tissues: general features, specific types
    4. Muscular tissue: general features, specific types
    5. Nervous tissue: general features, specific types
8. Body Cavities, Organs & Membranes (0.5 hr)
    1. Dorsal and Ventral Cavities
    2. Mucous Membranes
    2. Serous Membranes
    3. Synovial Membranes

4. Cutaneous Membrane

9. Integumentary System (1.5 hr)
    1. Skin: general features, dermis, epidermis
    2. Subcutaneous layer
    3. Epidermal derivative - hair, nail, glands
    4. Cutaneous sense receptors
10. Skeletal System (2.5 hr)
    1. Axial skeleton: skull, vertebral column, sternum, ribs
    2. Appendicular skeleton: pectoral girdle, pelvic girdle, limbs
    3. Components of a long bone
    4. Microanatomy of skeletal tissue: bone, cartilage
    5. Articulations: classification; structure of a synovial joint
11. Muscular System (2.5 hr)
    1. Microanatomy of skeletal muscle tissue
    2. Muscle - bone relationship: how movement is produced
12. Circulatory System (3 hr)
    1. Heart: gross and microanatomy
    2. Circulatory routes: adult overall plan: pulmonary and systemic circulations
    3. Fetal circulation
    4. Microanatomy of blood vessels
    5. Microanatomy of blood; hemopoiesis
13. Lymphatic System (1 hr)
    1. Organization
    2. Circulation
    3. Organs and tissues
14. Respiratory System (2 hr)
    1. Upper: nasal cavity to pharynx: gross and microanatomy
    2. Lower: larynx to lungs: gross and microanatomy
    3. Blood supply
15. Digestive System (3 hr)
    1. Organization, abdominal quadrants
    2. Peritoneum
    3. Histology and modifications of the digestive system
    4. Gross anatomy of organs
    5. Blood supply
16. Urinary System (2 hr)
    1. Organization
    2. Gross and microanatomy of: kidney, ureters, urinary bladder, urethra
17. Reproductive Systems (2.5 hr)
    1. Gross anatomy of testicular reproductive system; microanatomy of testis
    2. Gross anatomy of ovarian reproductive system; microanatomy of ovary and uterus
    3. Gamete formation; spermatogenesis, oogenesis
18. Endocrine System (1.5 hr)
    1. Organization
    2. Classes of hormones
    3. Endocrine glands, endocrine tissue, hormones
19. Nervous System (6 hr)
    1. Organization: CNS, PNS, receptors, effectors

2. Microanatomy of nervous tissue: neurons, neuroglia
3. Meninges, cerebrospinal fluid, blood-brain barrier and blood supply (circle of Willis)
4. Central nervous system: brain, spinal cord (gross and microanatomy)
5. Peripheral nervous system: sense receptors, afferent division (sensory pathways); efferent division (motor pathways - somatic and autonomic), microanatomy of nerves

20. Special Senses (1 hr)
    1. Eye
    2. Ear

Course Information and Institutional Policies

1. Examinations: All exams, including the lab identification exam, are multiple choice. Examinations are the only method of evaluation used in BIOL1410. Your final letter grade will depend on the sum of the results from all your exams. *No extra work will be permitted to improve a mark.*

   - *Lecture exams*: ***based primarily on class notes and diagrams discussed.*** Lecture notes will be posted on UM-Learn, but they are incomplete, so attending the lectures is strongly recommended to increase your likelihood of success. Sample lecture exam questions are available on UM-Learn. Please note that posted notes and oral lecture materials are copyrighted by the instructors (K. Campbell, O. Lee, K.Lester, P. Messing, C. Robson-Hyska) and may not be posted on-line to any site or otherwise published. Labs 6-8 will be tested as part of the final lecture exam.

   - *Laboratory exam*: a structure identification bell-ringer style exam based on the diagrams, models, charts, microscope slides, etc. studied in labs 1-5. Your lecture notes will act as a description of many of the structures that you will see in lab.
     The lab exam will take place during your registered lab slot the week of November 4th to 7th. It will cover labs 1-5 and consist of 40 exam stations and 70 multiple choice (MC) questions. The exam is primarily an identification exam, and you will be asked to identify structures based on their name, function, relationship to other structures, identifying characteristics etc. Questions will be based on the anatomical models, histological slides, charts, and other materials studied during the lab period. Sample lab exam questions will be provided during the labs and additional questions for practice as well as other resources will be provided on UM-Learn for the lab. Labs 6-8 will be tested as part of the final lecture exam.

2. Medical Notes and Other Documentation: The Self-Declaration for Brief and Temporary Absences Procedure and Policy is effective as of September 1, 2022 and therefore students will not be required to present medical or other documentation for absences due to extenuating circumstances of **120 hours or less**. However, the student must complete and submit the self-declaration form for brief or temporary absence must be completed and submitted to the instructor in lieu of the documentation. Please note that further documentation may be requested from students who claim multiple temporary absences or absences for more than 120 hours.

   Students absent for over 120 hours as a result of medical, compassionate, University scholastic, University athletic or religious events will require official documentation to explain the absence. Students should reach out to instructors in advance if absences are anticipated. **Personal vacations and work obligations are not considered acceptable absences.**

   Students with long-term academic accommodations are usually registered with Student Accessibility Services. The long-term academic accommodations are usually to accommodate long term physical or mental illness and accommodations can be in the form of notetaking, interpreting, assistive technology and assessment accommodations.

3. Missing a Midterm or the Lab Exam: For absences of 120 hours or less that result in a student missing an exam, or for students who expect to miss a midterm or the lab exam due to an approved event (e.g. U of M sporting event in which the student is participating), they must complete the self-declaration form to be found here.The full Self-declaration for Brief and Temporary Student Absences procedure can be found at: https://umanitoba.ca/governance/sites/governance/files/2022-02/self-declaration-for-brief-and-temporary-student-absences-procedure-2021-11-03.pdf. Students may need to provide documentation on request.

   It is the student's responsibility to meet all deadlines outlined in this policy. Students must notify their instructor as soon as possible, and **within 48 hours** of the end of the brief absence.

   Procedure for missed term work such as a midterm or the lab exam:
   a) submit the self-declaration of absence form to your instructor within 48 hours after the end of your brief absence
   b) After submission of the form, accommodations for missed assessments will be made as follows:
      - There will be be one set date for the deferred midterm and one for the deferred lab exam. Failure to write the midterm or the lab exam on the original date/time or on the scheduled deferred date/time (where allowed) will result in a mark of zero on that assessment.
      - Due to the nature of the lab ID exam, the deferred lab exam may have an altered format and be based on black and white line drawings with a combination of multiple choice and fill in the blank style questions.

4. Test Stress and Self Declaration Misuse:
   Tests can be stressful. Manage this by preparing effectively and using supports like the Academic Learning Centre and Student health and wellness. Do not misuse the Self-Declaration Form for strategizing (for example to skip a lab and write a midterm later).
   Submitting it dishonestly is considered fraud and may lead to disciplinary action under the UM Student Discipline Bylaw.

   To be clear, here are some examples of:
   Non-valid reasons:
   - Feeling unprepared to write the assessment
   - Attending a personal or family event (for example vacation, wedding)
   - Optional travel
   - Technological difficulties
   - Competitions or events, related to personal interests (choir, acting, pageants, exhibitions)
   - Employment-related commitments
   - Wanting to strategize the timing of the writing of the assessment
   - Missing a lecture or lab to have more time to study for an upcoming test or exam

   Valid reasons:
   - Sudden illness or injury on the day of an exam
   - Unexpected compassionate circumstances
   - Known conflicts of religious observance
   - Bereavement or loss of a loved one
   - Participation in an inter-university, provincial, inter-provincial, national, or international scholastic or athletic event

5. Missing a Final Exam:
   - Final Exam conflicts: Contact your academic advisor immediately.

- Missed final exams: If you miss a final exam due to valid short-term reasons, submit a Self-Declaration Form to request a deferred exam.
- Documentation: Faculty of Science students who have deferred more than two terms must provide additional official documentation for all subsequent deferral requests. Fraudulent submissions will be investigated under the Student Discipline Bylaw.
- Deferred final exam rules:
    - Must be written within 30 days (students are expected to be available during this time).
    - Re-deferrals may delay your exam until the course is next offered (which could be as late as a year later).
    - Deferred final exams are a privilege and are not always granted.
    - Deferred final exams may differ in format or content. Students have a responsibility to check on the structure and expectations with the course instructor (or Department if the instructor is unavailable).
    - Instructors are not required to provide notes or answer content questions for re-deferrals. It is the student's responsibility to collect all the learning materials they need during the course.
    - Students who are not registered in the Faculty of Science should consult their Faculty's or unit's policies on deferred exams.
    - In cases of re-deferral requests or having deferred more than two terms of final exams, failure to provide supporting documentation with the necessary and relevant details will result in a final exam grade of zero.

Students feeling ill and who may not be able to write their exam, should apply to write a deferred exam and not attempt to write their exam.

6. Missed Lecture Notes: If you miss a class, you are responsible for catching up. You can ask a classmate or your instructor for notes, but instructors are not required to provide them.

7. Laboratory preparation: Read the laboratory guide before each lab and access the PDF of lab images that will be posted to UM-Learn. Images from the textbook and lab manual will assist you to identify the structures on anatomical models, histological slides, charts and other lab materials. Attendance should be for the entire 2 hours *and you must go to your* ***registered*** *slot*. There is no academic penalty for missing a lab, but attendance is **strongly** encouraged and records of attendance are kept.

8. Missed labs: Missed labs can only be made up during the week in which the lab is offered. Contact the Lab Technician (Kes Gameiro) via email to make arrangements to attend a lab section earlier or later in the week.

9. Voluntary Withdrawal:

   You may withdraw from this course without academic penalty until **November 18, 2025** (in the event of date discrepancies, please follow the dates on the important dates and deadlines webpage). A "VW" will appear on your transcript instead of a grade. If you miss the deadline, a final grade will be recorded.

   Review your assessment feedback to assess your progress and determine if you are achieving the grade you are aiming for in this course. If you are unlikely to be successful in the course or not achieving the grade that you are aiming for, you should consider a VW from the course. You may also decide to review your progress with your instructor or an academic advisor.

   Note: VW is different from dropping a course during the Registration Revision Period, which removes the course from your record and tuition charges.

   The Registrar's Office website, withdraw from a course, includes more information on the different ways

in which you can withdraw from a course and important dates and deadlines to do so.

10. Authorized Withdrawal: At times medical or compassionate circumstances arise that prevent a student from performing as they would under normal circumstances. If you are in this position, you should contact a Faculty academic advisor to discuss your options. Be prepared to provide documentation supporting your situation. https://umanitoba.ca/student-supports/academic-supports/student-advocacy/authorized-withdrawal

11. Use of Copyrighted Material: Students must follow Canada's Copyright Act. No audio or video recording of the lectures is allowed in any format, openly or surreptitiously, in whole or in part without permission from the instructor. University guidelines state that copyrighted works, including those created by the course instructor, are made available for private study and research, and must not be distributed in any format without permission **(including uploading the material to large language models to generate notes or questions)**. Since it is **illegal**, do not upload copyrighted works to a learning management system (such as UM Learn) or any website, unless an exception to the Copyright Act applies or written permission has been confirmed.

    Do not upload copyrighted content to UM Learn or any website unless legally permitted. For more information, visit the University's Copyright Office website.

12. Recording Class Lectures: The Instructor and the University of Manitoba hold copyright over the course materials, presentations and lectures which form part of this course. No audio or video recording of lectures or presentations is allowed in any format, openly or surreptitiously, in whole or in part without permission from the instructor. Course materials (both paper and digital) are for the participant's private study and research, and should not be shared on any platform.

13. Class Communication: The instructors of this course will communicate to the class via UofM email and via course announcements in UM-Learn. To receive course announcements from UM-Learn in a timely manner, download the "Brightspace Pulse" app from the Apple App Store or Google Play. The University Student Email Policy requires that all students activate their official University email account. Please note that all communication between professors/instructors and you as a student must comply with the electronic communication with student policy.You are required to obtain and use your U of M email account for all communication between yourself and university personnel. Emails from private email addresses may not be received or get a response.

14. Academic Integrity: Academic integrity means being honest in your work and respecting others' contributions. The Faculty of Science expects students to follow all academic conduct rules and instructor guidelines.
    - Protect your work: Do not share or allow others to copy it. Report any compromise to your instructor.
    - No unauthorized devices: Possession of phones, earbuds, smartwatches, and more, during exams, intentional or not, will lead to an academic misconduct investigation unless explicit permission has been granted by the instructor.
    - Monitoring: The University may monitor assessments to ensure fairness.
    - Consequences: Violations are investigated under the student discipline by-law and student academic misconduct procedure. Minimum penalties are listed on the Faculty of Science website.

15. Artificial Intelligence (AI): Instructors decide whether AI tools (for example, ChatGPT, DALL·E, Quillbot, Grammarly) are allowed in their courses. If you are unsure about the use of AI in your course, it is your responsibility to ask your instructor for clarification.

16. Professional Conduct: Students in the University community can freely express their thoughts, opinions, and beliefs however they must observe the respectful work and learning environment policy and treat each other, staff and faculty with respect. Students who are alleged to have breached the Respectful Work and Learning Environment Policy will be investigated and disciplined according to the student non-academic misconduct and concerning behaviour procedure.

    Section 2.5 of the Student Non-Academic Misconduct and Concerning Behaviour Procedure describes types of inappropriate or disruptive behaviour

How to Succeed in your Science Courses

The Faculty of Science is committed to your academic success. Here are five key strategies to help you set yourself up for success and do well in all of your courses!

1. Use the Registration Revision Period: Use the Registration Revision Period to review course syllabi and adjust your schedule without financial penalty. Speak with instructors if you have questions.
2. Assess Your Workload: Be realistic about your time and commitments. Use the Academic Learning Centre's Managing Your Time Effectively and consult with an Academic Advisor in your faculty if needed – Academic advising.
3. Commit to Consistent Studying: Plan for at least three hours of study per lecture hour. Stay on top of your coursework.
4. Ask for Help Early: If you're struggling, contact your instructor, Teaching Assistants (TAs), or the Academic Learning Centre. Early support prevents ongoing issues. Reach out to academic advisors for broader concerns.
5. Learn Efficiently, Learn to Take Notes: In-person lectures cannot be rewatched, develop strong note-taking skills. The Academic Learning Centre offers note-taking tips which can help you learn efficiently.

Ways to Stay Engaged

Your university experience is not only about learning course content, but also about connecting with others and establishing a network during your time here. Don't let this opportunity slip away - reach out to your professors, instructors, teaching assistants as well as classmates. These connections will be helpful for your future endeavors.

Even though you may feel lost in a sea of university students, there are ways for you to connect with others in our community. Here are some suggestions:

1. Talk to your instructors! They are often familiar with various opportunities on campus that students can get involved with, including major outreach events like Science Rendezvous.
2. For Academic and Other Resources , please explore: https://umanitoba.ca/science/student-experience#student-supports-and-resources
3. To get involved with the Faculty of Science Students' Community, connect with Science Student Association as well as various discipline-specific groups: https://umanitoba.ca/science/student-experience/student-groups
4. There are so many great opportunities available for research in the Faculty of Science. Gain first-hand experience in our labs as a summer research assistant. https://umanitoba.ca/science/research/undergraduate-research

Resources and Supports Available to Students

1. **Student Accessibility Services:**

   If you are a student with an accessibility issue, please contact SAS for academic accommodation supports and services such as note-taking, interpreting, assistive technology and exam accommodations. Students who have, or think they may have, a disability (e.g. mental illness, learning, medical, hearing, injury-related, visual) are invited to contact SAS to arrange a confidential consultation. Setting up accommodations takes time and planning, so please reach out to SAS early in the term.

   Student Accessibility Services https://umanitoba.ca/student-supports/accessibility
   520 University Centre
   phone: 204-474-7423
   email: student_accessibility@umanitoba.ca

2. **Academic Learning Center (Writing and Learning Support):**

   The Academic Learning Centre (ALC) offers services that may be helpful to you throughout your academic program. Through the ALC, you can meet with a learning specialist to discuss concerns such as time management, learning strategies, and test-taking strategies. The ALC also offers peer supported study groups called Supplemental Instruction (SI) for certain courses that students have typically found difficult. In these study groups, students have opportunities to ask questions, compare notes, discuss content, solve practice problems, and develop new study strategies in a group-learning format.

   You can also meet one-to-one with a writing tutor who can give you feedback at any stage of the writing process, whether you are just beginning to work on a written assignment or already have a draft. If you are interested in meeting with a writing tutor, reserve your appointment 2-3 days in advance of the time you would like to meet. Also, plan to meet with a writing tutor a few days before your paper is due so that you have time to work with the tutor's feedback.

   These Academic Learning Centre services are free for U of M students. For more information, please visit the Academic Learning Centre website at: http://umanitoba.ca/student/academiclearning/

   You can also contact the Academic Learning Centre by calling 204-480-1481 or by visiting Fort Garry Campus ALC office in room 201 Tier Building.

3. **University of Manitoba Libraries (UML) https://umanitoba.ca/libraries/**

   As the primary contact for all research needs, your liaison librarian can play a vital role when completing academic papers and assignments. Liaisons can answer questions about managing citations, or locating appropriate resources, and will address any other concerns you may have, regarding the research process. Liaisons can be contacted by email or phone, and are also available to meet with you in-person. A complete list of liaison librarians can be found by subject: https://libguides.lib.umanitoba.ca. In addition, general library assistance is provided in person at 19 University Libraries, located on both the Fort Garry and Bannatyne campuses, as well as in many Winnipeg hospitals. For a listing of all libraries, please consult the following: https://libguides.lib.umanitoba.ca/librarylocations. Students can also receive help online, via the Ask-Us chat service found on the Libraries' Librarians and Archivists page: https://umanitoba.ca/libraries/librarians-and-archivists.

4. **Physical and Mental Health:**

   For 24/7 mental health support, contact the Mobile Crisis Service at 204-940-1781.

   Student Counselling Centre (SCC)

The Student Counselling Centre provides free counselling and mental health support to UM, English Language Centre, and International College of Manitoba (ICM) students. We are open year-round, Monday through Friday from 8:30 am to 4:30 pm. Our commitment is to offer a support service to every student who contacts us.

Visit the SCC's For Urgent Help webpage or the urgent care resources listed above if you require immediate support.

Visit the SCC's Our Services webpage for more information on accessing a variety of services including individual counselling, counselling workshops and groups, support resources, and learning disability assessment services.

Contact SCC if you are concerned about any aspect of your mental health, including anxiety, stress, or depression, or for help with relationships or other life concerns. SCC offers crisis services as well as individual, couple, and group counselling.
Student Counselling Centre: http://umanitoba.ca/student/counselling/index.html
474 University Centre (Fort Garry Campus) or S207 Medical Services Bldg (Bannatyne Campus)
(204) 474-8592

Student Support Case Management

Contact the Student Support Case Management team if you are concerned about yourself or another student and don't know where to turn. SSCM helps connect students with on and off campus resources, provides safety planning, and offers other supports, including consultation, educational workshops, and referral to the STATIS threat assessment team
Student Support Intake Assistant http://umanitoba.ca/student/case-manager/index.html
520 University Centre, Fort Garry Campus
(204) 474-7423

University Health Service (UHS)

Contact UHS for any medical concerns, including mental health problems. UHS offers a full range of medical services to students, including psychiatric consultation.
University Health Service http://umanitoba.ca/student/health/
100 University Centre, Fort Garry Campus
(204) 474-8411 (Business hours or after hours/urgent calls)

Health and Wellness Office

Students often juggle multiple demands, and we recognize that it can be difficult to find balance. For any changes you want to make to your health and wellness, the Health and Wellness Office at the UM would like to support you in your journey. We are here to help you take control of your own health and make your own decisions. We are a judgment-free space and we avoid labels whenever possible. For more information, please visit the Health and Wellness Office website.

Contact our Health and Wellness Educator, Bryanna Barker, if you are interested in peer support from Healthy U (https://umanitoba.ca/student-supports/health-wellness/healthy-u) or information on a broad range of health topics, including physical and mental health concerns, alcohol and substance use harms, and sexual assault.

Health and Wellness Educator https://umanitoba.ca/student-supports/health-wellness
healthandwellness@umanitoba.ca
469 University Centre
(204) 295-9032

For comprehensive information about the full range of health and wellness resources available on campus, visit: https://umanitoba.ca/wellness-and-mental-health. Student specific resources can be found here: https://umanitoba.ca/student-supports/student-health-and-wellness

Spiritual Care and Multifaith Centre

Spiritual care services are available to all, whether you identify as spiritual, atheist, religious or agnostic. Spiritual Services also offer specific denominational support for certain religious groups and by Indigenous Elders-in-Residence.

Sexual Violence Support and Education

Sexual violence affects people of all ages, sexual orientations, genders, gender identities, abilities and relationship statuses. At the UM, we are committed to ensuring a respectful work and learning environment for all. We want to build a safe and inclusive campus community where survivors of sexual violence know they can receive the supports they need to succeed, both academically and personally.

The Sexual Violence Resource Centre, located at 537 UMSU University Centre (Fort Garry campus) provides support, resources, information and referral services for any student, faculty or staff member who has been affected by sexual violence.

Indigenous Student Support

Staff, faculty and Elders are well-equipped to ensure your university experience is as beneficial, accessible, and successful as possible. Visit the Indigenous Student Experience website for more information on the supports and services available.

International Student Support

The transition to a new country and a new academic system can be both exciting and overwhelming. The International Centre (IC) is here to help you settle into life at UM. Visit the International Students website for more information.

5. **Health and Safety:**

   The UM is committed to maintaining a safe learning environment for all students, faculty, and staff. For information related to COVID-19 for our campus community, please visit the page: https://umanitoba.ca/coronavirus

   Please stay home when you are feeling unwell.

6. **Student Rights and Responsibilities:**

   As a student of the University of Manitoba you have rights and responsibilities. It is important for you to know what you can expect from the University as a student and to understand what the University expects from you. Become familiar with the policies and procedures of the University and the regulations that are specific to your faculty, college or school.

   The Academic Calendar http://umanitoba.ca/student/records/academiccalendar.html is one important source of information. View the sections *University Policies and Procedures* and *General Academic Regulations*.

   While all the information contained in these two sections is important, the following information is highlighted:

- If you have questions about your grades, talk to your instructor. There is a process for term work and final **grade appeals**. Note that you have the right to access your final examination scripts. See the Registrar's Office website for more information including appeal deadline dates and the appeal form.
- You are expected to view the General Academic Regulation section within the Academic Calendar and specifically read the **Academic Integrity** regulation. Consult the course syllabus or ask your instructor for additional information about demonstrating academic integrity in your academic work. Visit the Academic Integrity Site for tools and support http://umanitoba.ca/academicintegrity/ View the **Student Academic Misconduct** procedure for more information.
- The University is committed to a respectful work and learning environment. You have the right to be treated with respect and you are expected conduct yourself in an appropriate respectful manner. Policies governing behavior include the:

  Respectful Work and Learning Environment
  http://umanitoba.ca/admin/governance/governing_documents/community/230.html

  Student Discipline
  http://umanitoba.ca/admin/governance/governing_documents/students/student_discipline.html

  Violent or Threatening Behaviour
  http://umanitoba.ca/admin/governance/governing_documents/community/669.html

- If you experience **Sexual Assault** or know a member of the University community who has, it is important to know there is a policy that provides information about the supports available to those who disclose and outlines a process for reporting. The **Sexual Assault** policy may be found at: http://umanitoba.ca/admin/governance/governing_documents/community/230.html

  More information and resources can be found by reviewing the Sexual Assault site http://umanitoba.ca/student/sexual-assault/

- For information about rights and responsibilities regarding **Intellectual Property** view the policy http://umanitoba.ca/admin/governance/media/Intellectual_Property_Policy_-_2013_10_01.pdf

- For information on regulations that are specific to your academic program, read the section in the Academic Calendar and on the respective faculty/college/school web site http://umanitoba.ca/faculties/

- Contact an **Academic Advisor** within your faculty/college or school for questions about your academic program and regulations http://umanitoba.ca/academic-advisors/

- **Student Advocacy**

  Contact Student Advocacy if you want to know more about your rights and responsibilities as a student, have questions about policies and procedures, and/or want support in dealing with academic or discipline concerns.

  http://umanitoba.ca/student/advocacy/
  520 University Centre
  204 474 7423
  student_advocacy@umanitoba.ca

How to Succeed in BIOL1410

- Successful students will….
  - ✓ attend all lectures and labs.
  - ✓ annotate their notes with diagrams/analogies/explanations/etc. provided by the instructors.
  - ✓ actively and effectively use all allotted laboratory time to complete, discuss, and review lab exercises.
  - ✓ review/study their notes daily in an ***active*** manner (i.e. not just reading, but writing, condensing, discussing, etc.). For example, active review could involve:
    - making cue cards of important terminology.
    - making tables, flow charts, or diagrams to summarize information.
    - developing analogies or mnemonics to help explain/memorize information.
    - meeting regularly with a peer study group to discuss topics covered in lecture and/or lab.
    - making sample exam questions for each topic and sharing those questions with your peers.
    - explaining the topic in detail to another person (or speaking the explanation to yourself out loud without reading from your notes).
    - using the sample multiple choice questions posted on UM-Learn to practice for the exam. HOWEVER, do not just choose the correct answer – write out explanations for why other options are incorrect. If you can correctly answer the questions **AND** provide explanations **without** referring to your notes, then you likely have good knowledge/understanding of that topic. If you do not know why the correct answer is right, or cannot explain why other options are incorrect, then you should spend more time studying that particular topic. Use the sample questions and quizzes to help determine what you know and what you don't know. Spend more time studying the material where you could not easily answer questions or explain responses.
  - ✓ study their lecture notes in conjunction with lab material. Lecture notes will often be a verbal description of material seen in the lab, and can be useful for identifying structures.
  - ✓ **NOT** wait until the night before a quiz or exam to begin learning and understanding the material. For the best results, studying must begin the first week and continue for the duration of the term.
  - ✓ often ask questions in both lecture and lab, as well as outside of class (via email, appointments, study groups, etc.) in order to clarify their understanding of the material. Note: memorization is not equivalent to understanding. Some exam questions will test your basic knowledge by asking you to recall certain pieces of information, whereas others will ask you integrate and/or apply your knowledge.
  - ✓ discuss their progress with their instructors.

1) ORGANIZE YOUR TIME..... Enter your schedule into a daily planner / calendar, including:
    a) when assignments are due
    b) exam dates
    c) other important dates (voluntary withdrawal, start and end dates for classes, etc).
    d) times set *every day* for studying each subject (**starting from the first day of lecture**).

2) During lectures...*listen* to what is being said, then write notes. Write down figure numbers and use the figures from the text as you study.

3) Studying
    a) reading the notes and text doesn't necessarily mean that you are "studying"
    b) after lecture every day--highlight the major topics in your notes. This breaks up a sea of words into more easily digestible sections!
    c) read the information in each highlighted section. Use diagrams in the text as needed. Then ask your self "what do I need to know about this?"
    d) write this on scrap paper in an abbreviated form without looking at the notes. Then go back and read the notes to see if you made any mistakes or left any information out.
    e) you had heard the information in lecture that day, you have now read it three times that evening as you study. That's four times in your memory!
    f) try to understand the big picture of the topic– e.g. For ***Anatomy***: What is mitosis? Then tackle the details e.g. what are the phases of mitosis? What occurs in each of these phases? For ***Physiology:*** What is the resting membrane potential? What factors produce that potential? *Ask your self these questions out loud as you study. Studying this way provides understanding which is important for anatomy and crucial for Physiology.*
    g) For labs, keep reviewing the material *during* lab and during the term.

4) Writing Exams
    a) Be rested, have a meal containing complex carbohydrates.
    b) Read each question *carefully* and *completely*. Read the **stem** of the question while covering the rest of the question with the computer sheet. Circle **key words** and draw simple diagrams at the side of the paper if applicable. Think about what the question is asking then slowly expose each answer.
    c) Don't second guess the question. Questions test knowledge and the ability to integrate the information.
    d) Do not change answers, do the question *carefully* and *right* the first time.
    e) Do the questions you know first, then go back to those that you were not sure about.
    f) If you do not do well on the midterm exam, re-evaluate where you might have gone wrong by asking the following questions:
        i) Did you leave studying for the last week before exams?
        ii) Did you spend enough time studying the correct way?
        iii) Did you read the questions too quickly?
        iv) Was anxiety a significant problem? (Seek Help).
        v) Were you sleep deprived? Hungry? (Brain cells need rest and glucose to work optimally).

Additional help is available from the Academic Learning Centre, your academic advisors, and from your instructor, we are more than happy to discuss any issues you are having with course material to ensure your success.

Additional Tips for studying can be found in your BIOL1410 Laboratory Guide.