

Department of Physiology

Introduction to Physiology PSL250 - Fall 2023 Syllabus

Credit Hours: 4

Course Modality: Face-to-face

Course meeting days and times: Tuesday and Thursday from 12:40pm - 2:30pm

Course location: [E100 Veterinary Medical Center](#)

Instructor: Dr. Theodore Towse, Ph.D., he/him/his

Office: [4172 BPS](#)

Office Hours: Thursdays 3:00 - 5:00pm, or by appointment.

Email: towsethe@msu.edu

Office Phone: 884-5154

When contacting me directly, email is my preferred means of communication. When emailing **anyone** on the teaching team please put “**PSL250**” in the subject line and use your MSU assigned email account so we can prioritize your email and avoid the university’s SPAM filters. Lastly, although we will try to respond to your email as quickly as possible, allow at least 1 business day for us to respond. Note: if you have a question about the course that is not of a personal nature, please first post it to the discussion board before emailing any of the teaching team as one of your fellow students may know the answer and everyone on the discussion board can benefit from the knowledge. In fact, if you email me a question the first thing, I will ask you is “did you post your question to the discussion board?”

Lead ULA: Lauren Posey

Office Hours: Mon/Wed 10:30AM – 11:30AM

Email: poseylau@msu.edu

*In-person and [Zoom](#)

ULA: Ally Hopman

Office Hours: Mon 2:30PM – 4:30PM

Email: hopmana1@msu.edu

*In-person and [Zoom](#)

ULA: Riley Mickle

Office Hours: Tue 10:30AM – 11:30AM

Email: mickleri@msu.edu

*In-person and [Zoom](#)

ULA: Gio Polsinelli

Office Hours: Wed 12:00PM – 1:00PM

Email: polsine8@msu.edu

[Zoom](#)

ULA: Kate Workman

Office Hours: Wed 9:00AM – 10:00AM

Email: workma52@msu.edu

[Zoom](#)

*ULAs offering in-person office hours will host them in room 2240B of the Biomedical and Physical Sciences Building.

Course Information

Physiology is the study of the function, regulation, and integration of organs and organ systems of higher animals emphasizing human physiology. In this course we will explore core concepts in physiology and apply these concepts to everyday life including exercise, aging, and pathology.

Course Modality

1. Twice weekly lectures (face-to-face) in [E100 Veterinary Medical Center](#).
2. Lecture slides will be posted on D2L prior to lecture.
3. All exams will be online **during** the regularly scheduled class time.
4. In the event the university requires remote learning, PSL250 will be run asynchronously with content and assessments delivered on D2L and Connect.

Required Textbook & Course Materials

- Option 1: Anatomy & Physiology: An Integrative Approach, 4ed. ISBN 9781265749170. Looseleaf/Connect Combo with online eBook access. You can purchase this option at the **Spartan Bookstore** or at the **Student Bookstore** located at 421 East Grand River Avenue.
- Option2: Anatomy & Physiology: An Integrative Approach, 4ed. ISBN 1264265409. eBook/Connect Combo (no physical textbook). You can also purchase the course material through McGraw-Hill Connect by way of the link provided on D2L click on the link labeled 'Register Now' located in the 'Start Here' folder on the course D2L page.

Required Technologies

- A laptop computer with a functioning web camera and microphone are required for this course. We will be using laptops to complete all assessments including exams. Before the semester starts, please take a moment to update your web browser and, if necessary, your computer's operating system. For additional information about MSU's laptop requirement please click on the following link [MSU's laptop requirement](#). If you have any questions or concerns about these requirements, please do not hesitate to contact the teaching team. You may contact [MSU technology](#) for technical assistance from 7am to midnight any day the University is open.
- A high-speed internet connection is required to access the course websites. The following links provide useful information about [browser/mobile support for D2L](#), the [internet speed](#) you will need for this course as well as access to [high-speed internet access away from campus](#).
- All exams will be administered online through D2L using Respondus LockDown® browser. The link to the exam will be available on the course D2L website only in the 'Exams' folder.
- All practice assignments including SmartBook reading assignments, end of chapter homework questions, and practice quizzes will be deployed through a link in D2L and the McGraw-Hill Connect website.

Course Policies

Learning Continuity Statement

If you are unable to participate in class for an extended period-of-time:

- You are expected to contact your instructor as soon as you are able.
- In most cases the regular course policies related to grading and assignments will apply.
- In extraordinary cases, with appropriate documentation, we will work with the student to develop an appropriate plan of action for successful completion of the course.

Course Continuity Statement

In the unlikely event that your instructor is unable to participate in the course for an extended period:

- An announcement and a contingency plan will be posted on the course D2L website.

Prerequisites

- N/A

Course Platform/Structure

This course will be delivered in a traditional face-to-face format. The class is on Tuesdays and Thursdays from 12:40pm - 2:30pm. All exams will be administered **online during** the regularly scheduled course meeting dates and times. The final exam will be online and available on Thursday, December 14th, 12:45PM – 2:45PM.

Technical Assistance

For your convenience the web addresses and phone numbers for course related technical assistance are provided below.

- Contact McGraw-Hill Connect at 1-800-331-5094 or online at [McGraw-Hill Connect](#)
- Visit the MSU Help site at <http://help.msu.edu>
- Visit the Desire2Learn Help Site at <http://help.d2l.msu.edu>
- Call the MSU IT Service Desk at (517)432-6200, (844)678-6200, or e-mail at ithelp@msu.edu
- [Browser/mobile support for D2L](#).
- [Guide for internet speed](#). For this course, 25 Mbps should work.

Instructional Objectives

Course Objectives: After successfully completing PSL250, students will be able to explain the following “core concepts in physiology”:

1. **Scientific Reasoning:** Physiology is a science. Our understanding of the body arises from the application of the scientific method; thus, our understanding is always tentative.
2. **Causality:** The function of living organisms can be explained by a description of the cause-and-effect relationships that are present.
3. **Homeostasis:** The internal environment of the organism is actively maintained constant by the function of cells, tissues, and organs organized into negative feedback systems.
4. **Structure/Function:** The function of a cell, tissue, organ is determined by its form. Structure and function (from the molecular level to the organ system level) are intrinsically related to each other.

5. **Levels of organization:** An understanding of the physiological functions requires understanding the behavior at every level of organization from molecular to whole organism.
6. **Cell membrane:** The plasma membrane of cells is a complex structure that determines what substances enter or leave the cell. Cell membranes are essential for cell signaling and transport.
7. **Cell-to-cell communication:** The function of an organism requires that cells pass information to one another to coordinate their activities. These communication processes include neural and endocrine signaling.
8. **Cell theory:** Cells have many common functions but also many specialized functions that are required by the organism.
9. **Flow down gradients:** The transport of “stuff” (ions, molecules, blood, and gas) is a central process at all levels of organization of the organism and this simple model describes such transport.
10. **Interdependence:** Cells, tissue, organs, and organ systems interact with one another (are dependent on the function of one another) to sustain life.

The “Core Concepts in Physiology” are adapted from: Michael J, McFarland J. The core principles (“big ideas”) of physiology: results of faculty surveys. *Adv Physiol Educ.* 2011 Dec; 35(4):336-41. doi: 10.1152/advan.00004.2011.

Graded Assignments: The only graded assignments for this course are the 6 Module exams each worth 100 points and a 60-point cumulative exam. Note, the Module 6 and Final Exam will be administered as a single exam during the final exam period. The cumulative portion of the exam is worth 60 points which will include 30 questions from Modules 1 – 5 materials. All exam dates and times are listed below.

Exam Schedule

Exam	Date and Time	Lectures Covered
Module 1	Thursday, September 14, 1:00PM - 1:50PM,	Lectures 1 - 4
Module 2	Tuesday, October 3, 1:00PM - 1:50PM,	Lectures 5 - 8
Module 3	Tuesday, October 17, 1:00PM - 1:50PM,	Lectures 9 - 12
Module 4	Tuesday, November 07, 1:00PM - 1:50PM,	Lectures 13 - 16
Module 5	Tuesday, November 21, 1:00PM - 1:50PM,	Lectures 17 - 19
Module 6 + Final Exam*	Thursday, December 14, 12:45PM - 2:45PM,	Lectures 20 – 23*

SmartBook reading assignments: SmartBook uses a digital version of your textbook with embedded questions carefully curated to reflect the topics most relevant to this course and the material covered in lecture. SmartBook assignments are designed to be active reading assignments and can last anywhere from 30 to 45 minutes. Although there is a tentative due date for these assignments – set based on the exam date – they can be completed at any time before the end of the semester. These assignments are optional.

Homework Assignments: After completing the reading you can complete the end of chapter homework assignments which consist of 10-20 questions from the reading designed to reflect the topics most relevant to this course and the material covered in lecture. Although there is a tentative due date for these assignments – set based on the exam date – they can be completed at any time before the end of the semester. These assignments are optional.

Course Outline/Schedule

The table below shows the **tentative schedule** for PSL250 Spring 2023. Column 1 shows the week and class meeting dates while column 2 lists, in chronological order, the topic(s) covered, or Module exam. Note if changes to the schedule are needed, they will be posted on the course D2L website.

Week	Topic, Assignments, and Assessments
1 8/29, 8/31	Syllabus Review, Chapter 1: The Science of Anatomy and Physiology Chapter 1: Homeostasis, Chapter 3: Biological Macromolecules
2 9/5, 9/7	Chapter 4: Biology of the Cell
3 9/12, 9/14	Chapter 4: Biology of the Cell Module 1 Exam (9/14, 1:00PM - 1:50PM, Lectures 1 - 4)
4 9/19, 9/21	Chapter 6: Integumentary System Chapter 10: Muscle Tissue
5 9/26, 9/28	Chapter 10: Muscle Tissue Chapter 12 Nervous Tissue
6 10/03, 10/05	Module 2 Exam (10/03, 1:00PM - 1:50PM, Lectures 5 - 8) Chapter 13: Nervous System Brain
7 10/10, 10/12	Chapter 15: Autonomic Nervous System Chapter 16: Nervous System Senses
8 10/17, 10/19	Module 3 Exam (10/17, 1:00PM - 1:50PM, Lectures 9 - 12) Chapter 17: Endocrine System
9 10/24 - 10/26	Tuesday 10/24 No Class Fall Break Chapter 17: Endocrine System
10 10/31, 11/01	Chapter 18: Cardiovascular System Blood Chapter 19: Cardiovascular System Heart
11 11/07, 11/09	Module 4 Exam (11/07, 1:00PM - 1:50 PM, Lectures 13 - 16) Chapter 19: Cardiovascular System Heart
12 11/14, 11/16	Chapter 20: Cardiovascular System Vessels and Circulation
13 11/21, 11/24	Module 5 Exam (11/21, 1:00PM - 1:50 PM, Lectures 17 - 20) Thursday Nov 24 No Class
14 11/28, 11/30	Chapter 23: Respiratory System
15 12/05, 12/07	Chapter 24: Urinary System Chapter 26 Digestive System
12/14	*Final Exam: Thursday, December 14th, 12:45PM – 2:45PM. Module 6 + Cumulative Position covering Modules 1 - 5

Grading Policy

[MSU Final Exam Policy](#): No student should be required to take more than two examinations during any one day of the final examination period. Students who have more than two examinations scheduled during one calendar day during the final examination period may contact the Academic Student Affairs Office in their colleges for assistance in arranging for an alternate time for one of the three examinations.

Graded Course Activities

Listed below are graded course activities and associated points.

Assessments	Points
Module 1 Exam	100
Module 2 Exam	100
Module 3 Exam	100
Module 4 Exam	100
Module 5 Exam	100
Final Exam (Module 6 + Cumulative Portion)*	160
Total Points Possible**	560

Exams Policies:

- All exams will be administered online and must be taken on the date and time indicated on the syllabus, no exceptions.
- All exams will be administered online through D2L using Respondus LockDown® browser. The link to the exam will be available on the course D2L website in the folder titled 'Exams'.
- Respondus LockDown® browser records both audio and visual (camera and computer monitor screen) while you are completing the exam therefore, a working web camera and microphone are required for the course.
- Be sure to take the exam in a quiet location with good stable internet access. You may not be able to access the exam, or you may be kicked out of the exam if your internet connection is unstable.
- The main library has stable internet and is usually not busy during our regularly scheduled class time.
- It is the student's responsibility to ensure they have the appropriate technology, including high-speed internet, to take the exams. Have a backup plan.
- Talking during the exam is **strictly prohibited**.
- You are not allowed to wear headphones during the exam - noise cancelling or otherwise.
- You should not wear sunglasses or otherwise cover your eyes with – for example a baseball cap – during the exam.
- You are not allowed to use additional technology, notes, or supplementary materials during the exam.

- If you violate any of these policies, you may be required to take some or all the remaining exams in-person with a proctor. Additionally, if you violate these policies, you may get a zero on the exam and possibly a failing grade in the course.
- You can drop your lowest exam score from Modules 1 – 5.
- * The Module 6 Exam includes a 100-point Module 6 exam and a 60-point cumulative portion which is on material covered in Modules 1 - 5. The specific learning objectives you will be tested on for that portion of the final exam will be made available to you two weeks prior to the final exam.
- **Total points reflect a dropped exam (Modules 1-5).
- You cannot drop the final exam.

Missed Exams:

- A missed exam will be entered as a “o” in the grade book. A make-up exam will only be granted under **extenuating circumstances** such as a legitimate health emergency (serious illness, not a cold) or other serious extenuating circumstances (refer to grievance policy below).
- Documentation of the emergency must be provided by a physician on their letterhead, with their signature and contact information. Dr. Towse reserves the right to contact the physician regarding the illness/condition.
- Forgetting there was an exam is not considered an extenuating circumstance. Failing to plan accordingly and finding that where you are staying on your family vacation does not have internet access also does not qualify as an extenuating circumstance.
- If you unexpectedly miss an exam, contact Dr. Towse within 24 hours of the exam.
- Note: the make-up exam may not be the same as the exam given during the normal exam period. Instructors reserve the right to use an alternate exam/final.
- Any make-up exams must be taken within one week of the original exam date.

Grade Assignment (Grading Scale)

The table below shows the relationship between the percentages of points earned in the course and the assigned grade on a 4.0 scale.

Percentage of Points Earned	Assigned Grade
90% or above	4.0
85.0 to 89.99%	3.5
80.00 to 84.99%	3.0
75.00 to 79.99%	2.5
70 to 74.99%	2.0
65 to 69.99%	1.5
60 to 64.99%	1.0
0 to 59.99%	0

Grade Dissemination

All grades will be posted to D2L in a timely manner. Note: if you wish to challenge a grade you've earned on one of your assessments you need to email Dr. Towse no later than **one week** after the due date for that assessment. Failure to challenge your grade by this timeline indicates you accept your grades/scores as posted in D2L.

Other Course Policies

Accommodations for COVID-19 and other Serious Health Conditions

COVID-19: If you have been sick with COVID-19 [symptoms](#), have tested positive for COVID-19, or have been potentially [exposed](#) to someone with COVID-19 please follow CDC guidance to [self-isolate or stay home](#). Accommodations will be made for any student who must miss class due to COVID-19 illness or self-isolation so that it will not harm their performance or put them at a disadvantage in the class.

Other Serious Health Conditions: Contact Dr. Towse as soon as possible to discuss potential accommodations.

Attendance Policy

Attendance at lectures is not required but strongly encouraged.

Participation Policy

Your participation in the lecture is strongly encouraged. I suggest you ask and answer questions, post questions to the discussion board and generally stay engaged. You will get out of this course as much as you put into it.

Technology and Media

- Please post all content or course related questions that are not of a private nature to the course discussion board on D2L. If your question is of a personal nature, please feel free to email Dr. Towse or any member of the teaching team.
- Cellphone/Smartphone Usage: please do not use your phone in class. If you must take/make a call or receive a message, take a second to step out in the hallway and return when you are ready to re-engage in the class. If you know you will need to take a call, please inform me ahead of time and step out of the classroom to take your call.
- Use of cell phones or any additional technology during exams is strictly prohibited.
- D2L: will serve as the course website and can be found @ d2l.msu.edu. Once there, log in using your MSU NetID and password. After logging in, you will see a link to the specific webpage for this course. If you do not see this link, search for the course, and then pin it to your main page or check with the Office of the Registrar to make sure that you are officially enrolled in the course and D2L. Please note that I do not have the administrative clearance

to enroll students in my D2L course. The Office of the Registrar controls your enrollment in the course and D2L.

- All course materials (e.g., syllabus, PowerPoint lecture slides, assessments) are posted in D2L. The information will be made available to you in Modules. After the Module 1 exam has been completed Module 2 material will be made available, and so on.

Course Recordings, Intellectual Property and Social Media Use

- Lectures be recorded and made available on the D2L course site. Recorded lectures are not intended to replace regular attendance but are considered a supplement to the classroom experience.
- Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures.
- Recordings may not be reproduced, shared with those not in the class, or uploaded to other online environments. Doing so may result in disciplinary action.

Institutional Data Policy

<https://tech.msu.edu/about/guidelines-policies/msu-institutional-data-policy/>

Student Privacy Guidelines and Notification of Rights under FERPA

<https://reg.msu.edu/ROInfo/Notices/PrivacyGuidelines.aspx>

As members of a learning community, students are expected to respect the intellectual property of course instructors. All course materials presented to students are the copyrighted property of the course instructor and are subject to the following conditions of use:

- Students may not record lectures or other classroom activities without the advance written permission of the course instructor and, if applicable, any students whose voice or image is included in the recordings.
- If a recording is made, students may not share the recordings with other students enrolled in the class. Sharing is limited to using the recordings only for their own course-related purposes.
- *Video and audio recordings made of online lectures may contain inaudible or invisible watermarks to identify shared media:* <https://support.zoom.us/hc/en-us/articles/360021839031-Audio-Watermark>
- Students **may not** post the recordings or other course materials online or distribute them to anyone not enrolled in the class without the advance written permission of the course instructor and, if applicable, any students whose voice or image is included in the recordings.
- Any student violating the conditions described above may face academic disciplinary sanctions.

Student Policies and Expectations

The All-University Policy on Integrity Of Scholarship and Grades

All participants in this class are held to the standard set by MSU's Policy on Integrity of Scholarship and Grades. The policy can be read in full at the [MSU Ombudsperson's website](#).

I have no tolerance for cheating. If you are suspected of cheating on an exam a formal complaint will be filed with the MSU Office of Student Support and Accountability.

Disciplinary action may include one of the following; retaking a revised version of the exam which may be an essay or oral exam, receiving a grade of zero on the exam, or failure of the course.

Spartan Code of Honor

On March 22, 2016, The Associated Students of Michigan State University (ASMSU) adopted the following Spartan Code of Honor:

“As a Spartan, I will strive to uphold values of the highest ethical standard. I will practice honesty in my work, foster honesty in my peers, and take pride in knowing that honor is worth more than grades. I will carry these values beyond my time as a student at Michigan State University, continuing the endeavor to build personal integrity in all that I do.”

Disability Access

“Michigan State University is committed to providing equal opportunity for participation in all programs, services and activities. Requests for accommodations by persons with disabilities may be made by contacting the Resource Center for Persons with Disabilities at 517-884-RCPD or on the web at rcpd.msu.edu. Once your eligibility for an accommodation has been determined, you will be issued a verified individual services accommodation (“VISA”) form. Please present this form to me at the start of the term and/or two weeks prior to the accommodation date (test, project, etc). Requests received after this date will be honored whenever possible.”

Inclusion

“MSU welcomes a full spectrum of experiences, viewpoints, and intellectual approaches because they enrich the conversation, even as they challenge us to think differently and grow. However, we believe that expressions and actions that demean individuals or groups compromise the environment for intellectual growth and undermine the social fabric on which the community is based.” -MSU Faculty Senate 2017.

Expected Hours of Participation/Work Outside Class Per Week

Expect to study at least 2-3 hours outside of class for every 1 hour of time you spend in class. Therefore, with approximately 4 hours of in-class time per week you should aim to spend about 8-12 hours outside of class studying for this class. Note, individual differences may exist as some students may need to study more or less to achieve their desired goals in the course.

Grief Absences and Mental Health

If you experience the death of a family member or emotional distress from a similar tragedy, refer to [MSU's Grief Absence Policy](#). A Grief Absence Request Form is available on this [Student Resources](#) page and is located on the left right side of the page under the "Other Links menu".

For resources related to Mental Health please see: [Mental Health](#).

Professionalism Policy

"MSU strives to build an academic community with living and learning environments that expects tolerance of viewpoints and civility toward others, whether at public forums, athletic events, in residential communities, classrooms or laboratories."

"We call upon all who participate in university events to promote tolerance and civil behavior and to hold themselves to high standards that reflect the university's commitment to respect viewpoints that may be different from their own. Only by respecting individuals with diverse perspectives and ideas can we build an environment of civility that is conducive to advancing knowledge and transforming lives."

Student Rights and Responsibilities

Students have a range of support and information options available to them to discuss actions or activities related to their academic, personal or professional lives at MSU. These rights and resources are detailed on the [ombudsperson's website](#).

Limits to Faculty/Student Confidentiality; Mandatory Reporting

MSU Policy on Relationship Violence and Sexual Misconduct.

Available on the [RVSM website](#).

[RVSM Limits to Confidentiality](#)

Religious Observances

Students are expected to notify their instructor in advance if they intend to miss class to observe a holy day of their religious faith. Refer to the registrar's page on [religious observance policy](#). For a current schedule of major religious holidays, see the [office of inclusion and intercultural initiatives](#).

Pronouns

Please follow posted [MSU guidelines regarding use of pronouns](#).

Emergency Procedures

In the event of an emergency arising within the [classroom/lab], the [Professor, Teaching Assistant (TA), graduate student, instructor, Facilitator] will notify you of what actions that may be required to ensure your safety. It is the responsibility of each student to understand the evacuation, “shelter-in-place,” and “secure-in-place” guidelines posted in each facility and to act in a safe manner. You are allowed to maintain cellular devices in a silent mode during this course, in order to receive emergency SMS text, phone or email messages distributed by the university. When anyone receives such a notification or observes an emergency situation, they should immediately bring it to the attention of the [Professor, Teaching Assistant (TA), graduate student, instructor, Facilitator] in a way that causes the least disruption. If an evacuation is ordered, please ensure that you do it in a safe manner and facilitate those around you that may not otherwise be able to safely leave. When these orders are given, you do have the right as a member of this community to follow that order. Also, if a shelter-in-place or secure-in-place is ordered, please seek areas of refuge that are safe depending on the emergency encountered and provide assistance if it is advisable to do so.” Prepared by: Captain Penny Fischer Michigan State University Police.

Policies for Student Athletes

See MSU policies on [Student Athletes](#).