



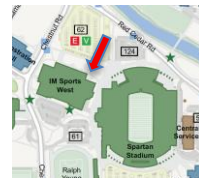
College of Natural Science
MICHIGAN STATE UNIVERSITY

PSL 431 Human Physiology I, Fall 2025 Course Syllabus

Course Modality: In-Person

Lectures: M, W, F from 1:50 – 2:40 pm, **IM WEST 208** (enter from lot 62 off Red Cedar Rd, bypass ID desk and go up to the second floor on the staircase in the entrance, 208 is halfway down the hall straight in front of the stairs)

Recitations: W or Th (depending on registered section)



Course Description: This course is open to juniors and seniors. It is part 1 of a two-semester sequence required for PSL majors (PSL 431/432), but is open to other interested students who meet the prerequisites. It covers fundamental cell physiology and how it applies to the nervous, vascular, cardiac, and respiratory systems. At the end of this course, students will be able to describe how these systems work at the molecular, cellular, tissue and system levels.

Required Materials for This Course

Textbook: Choose the **print or electronic version of** Human Physiology: From Cells to Systems, by Lauralee Sherwood, Cengage Publishing; 9th Edition recommended (older editions are ok).

- **Print:** ISBN #9781305616721, Available from MSU Bookstore, Amazon, etc.
- **Electronic:** 4- or 12-month Cengage Unlimited subscription. Purchase from [Cengage.com](https://www.cengage.com) and use Course Key (**MTPQ9063BLGF**) to access. ISBN # 9780357691373 (search by ISBN online to purchase). If you only plan on taking PSL 431, but not the subsequent course PSL 432, then select access through Feb 11 2026 (\$58.99). If you also plan on taking PSL 432 in SS26, which uses the same textbook, then select access through August 10, 2026 (\$80.99).

D2L: All other required course materials will be posted to [D2L](#). You will need your MSU NetID to log in to the course from the [D2L homepage](#). The [D2L](#) folder **FS25-PSL-431-LEC1-Human Physiology I** contains:

- a. Lecture and Recitation Materials & Recorded Lectures
- b. Weekly Practice Questions and Practice Exams (optional, but strongly encouraged!)
- c. **Review Quizzes (GRADED – find these in the Calendar and Lecture Materials!)**
- d. Grades

Important Dates

- Class Begins 08/25/2025
- Labor Day Holiday 09/01/2025
- Last day to drop with refund 09/18/2025
- Last day to drop with no grade reported 10/13/2025
- Fall break 10/20/2025-10/21/2025
- Thanksgiving break 11/27/2025-11/28/2025
- Class Ends 12/07/2025

Notes on course schedule below

Units are color coded

Gray lines separate weeks (MWF)

Graded quizzes are in *blue italics* (F release/M Due); or *red italics* (other release or due date)

Exams in **BOLD BLUE CAPS**

Wednesday of Thanksgiving Week is a Recorded Lecture

| Date | Lec# | Lecture Title | Reading | Instructor | Rec # |
|---|------|---|------------------------------|------------------------|-------|
| UNIT ON CELL PHYSIOLOGY: LECTURES 1 - 9 | | | | | |
| 25-Aug | 1 | Course Intro, Homeostasis & Plasma Membrane. <i>Syllabus Quiz Availability Begins, 2:40 PM</i> | Chapter 1 | Wehrwein and Leininger | 1 |
| 27-Aug | 2 | Principles of Plasma Membrane Transport | Ch 3 - 3.5 | Leininger | |
| 29-Aug | 3 | Membrane Potential and Protein Transport. <i>Syllabus Quiz Due, 1:50 PM</i> | Ch. 3.6 + 2.3-2.4 | Leininger | |
| 1-Sep | | Labor Day Break - NO LECTURE | | | |
| 3-Sep | 4 | Receptors | Ch. 4.5 - 4.7 | Leininger | 2 |
| 5-Sep | 5 | Epithelial Cells <i>Review Quiz-1 Availability Begins, 2:40 PM</i> | pg 6, 74-75, TBD | Leininger | |
| 8-Sep | 6 | Neurons: Structure and Excitability <i>Review Quiz-1 Due, 1:50 PM</i> | Ch. 4 - 4.3 | Leininger | 3 |
| 10-Sep | 7 | Neurons: Synaptic Mechanisms | Ch 4.4 | Leininger | |
| 12-Sep | 8 | Muscles: Skeletal & Neuromuscular Junction <i>Review Quiz-2 Availability Begins, 2:40 PM</i> | Ch 8 - 8.3 + 7.2-7.3 | Leininger | |
| 15-Sep | 9 | Muscles: Cardiac & Smooth Muscle <i>Review Quiz-2 Due, 1:50 PM</i> | Ch 8.6 | Leininger | |
| UNIT ON NERVOUS SYSTEM: LECTURES 10 - 17 | | | | | |
| 17-Sep | 10 | Anatomy & Basic Physiology of the Nervous System (Neurons, Glia, BBB), Cerebellum, Brain Stem & Spinal Cord | Ch. 5 (p133-144) + 5.10, 6.1 | Leininger | 4 |
| 19-Sep | 11 | Hypothalamus, Thalamus, Basal Nuclei | Ch 6.4 | Leininger | |
| 22-Sep | | EXAM 1 (Cell Phys): Covers Lectures 1-9 | | | |
| 24-Sep | 12 | Cortex + Plasticity + Synaptic Integration | Ch 6.1 | Leininger | 5 |
| 26-Sep | 13 | Sensory Nervous System: Vision <i>Review Quiz-3 Availability Begins, 2:40 PM</i> | Ch 6.3 | Leininger | |
| 29-Sep | 14 | The Sensory Nervous System: Hearing <i>Review Quiz-3 Due 1:50 PM</i> | Ch 6.2 | Leininger | 6 |
| 1-Oct | 15 | Sensory Nervous System: Touch | Ch 6.3 | Leininger | |

| | | | | | |
|--|----|---|------------------------------|----------|----|
| 3-Oct | 16 | Autonomic Nervous System 1 <i>Review Quiz-4 Availability Begins, 2:40 PM</i> | Ch. 7.1 | Wehrwein | |
| 6-Oct | 17 | Autonomic Nervous System 2 <i>Review Quiz-4 Due, 1:50 PM</i> | Ch. 7.1 | Wehrwein | |
| UNIT ON CARDIAC SYSTEM: LECTURES 18 - 22 | | | | | |
| 8-Oct | 18 | Overview of the Cardiovascular System | Ch. 8.6, 9.1, 9.5 | Wehrwein | 7 |
| 10-Oct | 19 | Cardiac Electrophysiology: Excitable Cells and the Cardiac Conduction System <i>Review Quiz-5 Availability Begins, 2:40 PM</i> | Ch. 3.6 (review unit 1), 9.2 | Wehrwein | |
| 13-Oct | | EXAM 2 (Nervous System): Covers Lectures 10-17 | | | 8 |
| 15-Oct | 20 | The Electrocardiogram (ECG) <i>Review Quiz-5 Due, 1:50 PM</i> | Ch. 9.2 | Wehrwein | |
| 17-Oct | 21 | The Cardiac Cycle <i>Review Quiz-6 Availability Begins, 2:40 PM</i> | Ch. 9.3 | Wehrwein | |
| 20-Oct | | Fall Break - No Lecture | | | |
| 22-Oct | 22 | Cardiac Hemodynamics <i>Review Quiz-6 Due, 1:50 PM</i> | Ch. 9.4 | Wehrwein | |
| UNIT ON VASCULAR AND BLOOD: LECTURES 23-28 | | | | | 9 |
| 24-Oct | 23 | Overview of the Vasculature and Fluid Dynamics | Ch. 10.1 | Wehrwein | |
| 27-Oct | | EXAM 3 (Cardiac System): Covers Lectures 18-22 | | | |
| 29-Oct | 24 | Arteries, Arterioles, and Regulation of Peripheral Resistance - Part 1 | Ch. 10.2, 10.3 | Wehrwein | 10 |
| 31-Oct | 25 | Arteries, Arterioles, and Regulation of Peripheral Resistance - Part 2 <i>Review Quiz-7 Availability Begins, 2:40 PM</i> | Ch. 10.2, 10.3 | Wehrwein | |
| 3-Nov | 26 | Control of Mean Arterial Pressure <i>Review Quiz-7 Due, 1:50 PM</i> | Ch. 10.6 | Wehrwein | 11 |
| 5-Nov | 27 | Capillaries, Veins, Lymphatics | Ch 10.4, 10.5 | Wehrwein | |
| 7-Nov | 28 | Blood and Vascular Review <i>Review Quiz-8 Availability Begins, 2:40 PM</i> | Ch 11.1, 11.2, 11.3 | Wehrwein | |
| 10-Nov | | EXAM 4 (Vascular System): Covers Lectures 23 - 28 <i>Review Quiz-8 Due, 1:50 PM</i> | | | |
| UNIT ON REPSIRATORY SYSTEM: LECTURES 29-35 | | | | | |
| 12-Nov | 29 | Resp. Anatomy | Ch 13.1 | Uhal | |

| | | | | | |
|--|----|---|---------------|----------|--------|
| 14-Nov | 30 | Resp. Mechanics-1 <i>Review Quiz-9 Availability Begins, 2:40 PM</i> | Ch 13.2 | Uhal | 12 |
| 17-Nov | 32 | Resp. Mechanics-2 <i>Review Quiz-9 Due 1:50 PM</i> | Ch 13.2 | Uhal | 13 |
| 19-Nov | 33 | Lung Volumes & Ventilation | CH 13.2 | Uhal | |
| 21-Nov | 34 | Gas Exchange & Transport | Ch 13.3, 13.4 | Uhal | |
| 24-Nov | 35 | Control of Breathing <i>Review Quiz-10 Availability Begins, 2:40 PM</i> | Ch 13.5 | Uhal | No Rec |
| 26-Nov | 36 | Intro to Clinical Measurements & Pulmonary Function Testing NO IN PERSON MEETING ON THIS DATE! THIS LECTURE WILL BE RECORDED AND POSTED TO D2L FOR YOUR VIEWING | Ch 13.2 | Uhal | |
| 28-Nov | | Thanksgiving Break - NO CLASS | | | |
| UNIT ON INTEGRATIVE PHYSIOLOGY AND EXERCISE: LECTURES 37-38 | | | | | |
| 1-Dec | 36 | Integrative Physiology <i>Review Quiz-10 Due 1:50 PM</i> | Appendix B | Wehrwein | 14 |
| 3-Dec | 37 | Integrative Physiology | Appendix B | Wehrwein | |
| 5-Dec | 38 | Exam 5 Review Session <i>Review Quizzes 11 Availability begins 2:40pm (Due Before Final Exam)</i> | N/A | Wehrwein | |
| 10-Dec | | <i>Review Quiz-11 Due BY EXAM TIME</i> EXAM 5 (Respiratory & Integrative Physiology): Covers Lectures 29-37 Wednesday Dec 10, 5:45-7:45pm | | | |

Attendance Policy

- **Lectures:** Students are strongly encouraged to attend lectures so that they have an opportunity to engage with the content and ask questions. However, attendance is not required at lectures and will not be tracked.
- **Recitations:** Students are expected to attend weekly in-person recitation sections. Attendance is required to complete the weekly IN PERSON recitation quiz at the end of class.

Instructors for Lectures: PSL 431 is *team-taught* by 3 instructors. **Each instructor maintains scheduled in-person office hours.** Meetings with instructors may also be made by appointment to occur in-person or via Zoom: email to set up a meeting. Instructors contacted via email will endeavor to reply within 24 hours.

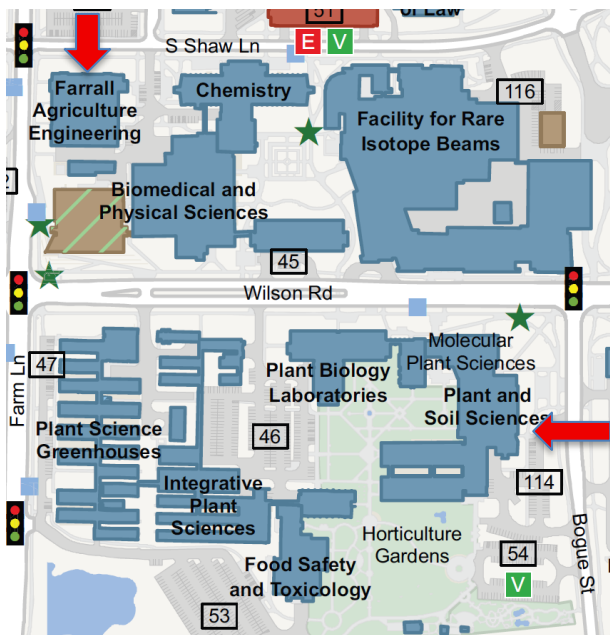
| Instructor | Email | Office Hours | Location |
|--|--|--|--|
| Erica Wehrwein, Ph.D. Course Director Pronouns: she/her/hers (Autonomic Nervous System, Cardiac, Vascular) | Wehrwei7@msu.edu | Available all semester Th 1:30-2:30pm and by appointment | BPS, Room 2168 BPS = Biomedical and Physical Sciences Building |
| Gina Leininger, Ph.D. Pronouns: she/her/hers (Cell Physiology & Nervous System) | leinning@msu.edu | Available Aug 25-Oct 13 TBD | ISTB, Room 1403 ISTB = Interdisciplinary Science and Technology Building |
| Bruce Uhal, Ph.D. Pronouns: he/him/his (Respiratory) | uhal@msu.edu | Available Nov 12-Nov 26 TBD | BPS, Room 3197 BPS = Biomedical and Physical Sciences Building |

Who to Contact If You Have Questions About...

- **Grading, Course Materials, Lecture Recordings, Registration Issues, Exam Conflicts:** Contact [Dr. Wehrwein](#)
- **Attending a Different Recitation Section:** Attendance is mandatory in recitation to earn points. If you have an approved reason for needing to attend a different recitation section (e.g. illness, unavoidable travel conflict, etc.) then get permission from [Dr. Wehrwein](#) PRIOR to attending any other recitation section.
- **Course Content:** Contact the Instructor who taught the lecture or concept

Recitation Time, Location & TA: Attend your registered recitation section; **See Map Below. Enter off Bogue St to Plant and Soil Sciences near lot 114 for Wed Sections.** The room is in the nearest corridor parallel to Bogue. There are other rooms marked 158 in connected Plant Biology so be sure you find the correct room.

| Sec# | Day | Time | Location | TA | Email |
|------|-----|----------------|-----------------------------------|------------------------|--|
| 008 | W | 9:10-10:00am | Plant and Soil Sci 158 (PSS A158) | Ariana Mona | zimme302@msu.edu |
| 001 | W | 10:20-11:10am | Plant and Soil Sci 158 (PSS A158) | | |
| 002 | W | 11:30-12:20 pm | Plant and Soil Sci 158 (PSS A158) | | |
| 003 | Th | 11:30-12:20 pm | Farrall Ag Eng Hall 119 (FAE 119) | Alyssa Vadovsky | vadovsky@msu.edu |



Red arrows indicate recitations

Lecture Format:

- **38 lectures are delivered by instructors in-person.** Live lectures are recorded and subsequently posted to [D2L](#). Recorded lectures are available for viewing but **not** download due to copyright restrictions.
- Glitches sometimes occur with recording so we do not guarantee that all live lectures will be recorded/posted. If a recording issue occurs, we will post a lecture from a previous year or a re-recorded lecture.
- All course materials are the copyrighted property of the course Instructors and Michigan State University. Students are therefore not permitted to make, post, or otherwise distribute recordings of the lectures or other course material without the advance written permission of the course Instructors.

Recitation Format:

- **14 Recitations will be led by TAs in-person.** Each recitation focuses on a challenging concept (or 2) from the previous lectures. Recitations will enable you to “actively exercise” concepts to enhance your learning.
- [Download Recitation materials from D2L and work through them PRIOR to coming to Recitation.](#) Preparing ahead of time will help you get the most out of the recitation.
- **There is a Quiz at the end recitation (5 multiple-choice questions, 10 points; no quiz for Rec 14)**
 - The quiz only covers material from the recitation. If you work through the recitation materials ahead of time *and* participate in the recitation you should be able to ace it.
 - One quiz question will come from the weekly practice questions
 - BRING A PENCIL! Recitation quizzes are administered via scantrons, which will be provided by your TA.
- **Your 3 lowest RECITATION quiz scores (out of 13) will be dropped.**
- **If you must miss a recitation meeting due to an emergency, a documented illness or significant other issue, contact Dr. Wehrwein to your recitation period to discuss accommodations. You will be expected to make up the missed material to get credit.**
 - **Make up recitations can be done by attending another sections, meeting with your TA, or for some topics may be offered asynchronously (audio recording of class slides after the session). Contact Dr Wehrwein for arrangements.**

Grading Policy

There are 695 points in this class. These come from:

| Item | Total Points | # Questions | Notes | % of Grade |
|-----------------------|--------------|-------------|--|------------|
| Syllabus Quiz | 5 | 5 | See D2L | <1% |
| 11 D2L Review Quizzes | 50 | 10 per quiz | 5 points per Quiz (0.5 points per question), <u>but drop lowest quiz</u> | 8% |
| 13 Recitation Quizzes | 90 | 5 per quiz | 2 points per question; Really 130 pts, but <u>Drop 3 quizzes</u> | 15% |
| Exam 1 | 90 | 30 | 3 points per question | 15% |
| Exam 2 | 90 | 30 | 3 points per question | 15% |
| Exam 3 | 90 | 30 | 3 points per question | 15% |
| Exam 4 | 90 | 30 | 3 points per question | 15% |
| Exam 5 | 90 | 45 | 2 points per question | 15% |
| TOTAL POINTS | 595 | | | |

- **D2L Review Quizzes:** Review Quizzes are taken via D2L. There are 2 review quizzes for Cell, Nervous, Circulatory, Vascular and Respiratory, and 1 for Integrative for a total of 11 quizzes (lowest score dropped). There are 10 questions per quiz, each worth 0.5 points. Each quiz is offered during an ~3-day “release window” on [D2L](#); after the window closes the quiz CANNOT be made up. SEE [D2L CALENDAR AND LECTURES SECTION FOR THE QUIZ RELEASE WINDOWS AND LINKS TO QUIZZES](#). *Review quizzes include exam-level questions to encourage you to prepare in a timely and appropriate fashion.*
- **Recitation Quizzes** are taken during Recitation, and are composed of 5 multiple-choice questions, 2 points each. *Note that recitation quiz questions are meant to help you learn concepts, and so are less difficult than exam questions.*
- **Exams 1 - 5** are taken during the lecture and final exam periods. Exams 1-4 are 30 questions. Exam 5 during finals week is 45 questions. *Practice exam questions are similar in difficulty to the real exams. Use practice exams to prepare!*

Grade Dissemination: All grades on course assessments and final course grades will be posted in [D2L](#). Contact Dr Wehrwein if you wish to discuss your grade in general. If you wish to discuss a content-related questions (e.g., an exam or quiz question), you should contact the instructor who presented the content.

Determination of Final Course Grades: Final grades are determined by the percentage of points earned out of the total possible (695) points as per the table below. Any percentage that is 0.50 – 0.99 rounds up to the next highest number (e.g. 83.5 → 84%). Any percentage that is 0.01 – 0.49 does not round up to the next highest number (e.g. 83.4 → 83%).

| Students earning ____ of possible course points | Will receive a grade of ____ or better | Point ranges per grade level |
|---|--|------------------------------|
| ≥ 90% | 4.0 | 535.5-595 |
| 89% to 85% | 3.5 | 505.75-535.4 |
| 84% – 80% | 3.0 | 476-505.74 |
| 79% - 75% | 2.5 | 446.25-475.9 |
| 74% - 70% | 2.0 | 416.5-446.24 |
| 69% - 65% | 1.5 | 386.75-416.4 |
| 64% - 60% | 1.0 | 357-386.74 |

| Students earning ____ of possible course points | Will receive a grade of ____ or better | Point ranges per grade level |
|---|--|------------------------------|
| 59% and below | 0.0 | 0-356.9 |

- In practice, the straight grading scale described above may be curved, if needed, to adjust for yearly variations in test difficulty and class performance. However, the final grade curve will not be more rigorous than the straight grading scale and will be designed to help, not hurt, the student.
- Petitions to re-evaluate a course grade will be considered in writing only (by e-mail) and must be submitted to Dr. Wehrwein within one week after the beginning of the semester following completion of the course, according to University guidelines.

D2L Review Quiz Dates:

- Each D2L Review Quiz is available on [D2L](#) during an ~3-day release window. After the window closes the quiz CANNOT be made up.
- Release dates and due dates are listed in the table below for convenience, as well as on the course schedule and the D2L course calendar. Most of them release on Fridays and are due on the following Monday by lecture time, but **exceptions are noted in bold red font**.
- Links to Review Quizzes can be found on the [D2L](#) Calendar and within the Content for each Unit.
- There are 10 questions per quiz, each worth 0.5 points.
- Lowest quiz score will be dropped so long as all quizzes are completed

| D2L Quiz Name | Quiz Availability Begins: | Quiz Availability Ends | Unit / System | Covers Lectures |
|----------------|-----------------------------|---|-----------------|-----------------|
| Review Quiz 1 | 9/8 (F), 2:40 pm | 9/10 (M), 1:50 pm | Cell Physiology | 1-5 |
| Review Quiz 2 | 9/12 (F), 2:40 pm | 9/17 (M), 1:50 pm | Cell Physiology | 6-8 |
| Review Quiz 3 | 9/26 (F), 2:40 pm | 9/29 (M), 1:50 pm | Nervous | 10-13 |
| Review Quiz 4 | 10/3 (F), 2:40 pm | 10/6 (M), 1:50 pm | Nervous | 14-16 |
| Review Quiz 5 | 10/10 (F), 2:40 pm | 10/15 (W), 1:50 pm (due to Exam 2) | Cardiac | 18-19 |
| Review Quiz 6 | 10/17 (F), 2:40 pm | 10/22 (W), 1:50 pm (due to fall break) | Cardiac | 20-21 |
| Review Quiz 7 | 10/31 (F), 2:40 pm | 11/3 (M), 1:50 pm | Vascular | 23-25 |
| Review Quiz 8 | 11/7 (F), 2:40 pm | 11/10 (M), 1:50 pm | Vascular | 26-28 |
| Review Quiz 9 | 11/14 (F), 2:40 pm | 11/17 (M), 1:50 pm | Respiratory | 29-30 |
| Review Quiz 10 | 11/24 (M), 2:40 pm | 12/1 (M), 5:45 pm (due to Thanksgiving) | Respiratory | 31-34 |
| Review Quiz 11 | 12/5 (F), 2:40 pm | 12/10 (W), 5:45 pm (with Final Exam) | Integrative | 36-37 |

Missed Exams or Arriving Late to Regular Exam:

- Make-Up Exams are offered 2 days after the missed regular exam at a common time on Wednesdays 7-7:50PM in 1425 BPS. You must alert Dr Wehrwein if you plan to use a make-up exam option 24 hours BEFORE to ensure that an exam and proctor are available.
- Note that a 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.
- Regular exams will be offered during the 50 min class period so if you arrive late you will still only have until the end of class to complete the exam. If any students have completed the exam before you leave,

then you will not be allowed to begin taking the exam upon your late arrival and will be referred for a make-up exam.

Rules for Exams:

- BRING A PENCIL!!
- No questions on content will be answered during the exams.
- Exams are given via Scantrons (provided by instructors). Exams results will be released via the Scoring Office and grades will be posted to the D2L Gradebook usually within 1 week of the exam date. It is the responsibility of the student to assure that his/her exam was graded correctly.
- Any appeals for additional credit on an exam because of a scoring error or student appeal to re-evaluate individual questions must be submitted in writing (by email) to the relevant instructor and Dr. Wehrwein within 1 week of the time exam results are distributed. Appeals must provide justification for why the scoring issue or alternate answer deserves to receive credit. You cannot appeal a question that you failed to answer.

Exam Dates and Optional Exam Help Sessions:

- Help Sessions are held prior to each exam. Attendance is OPTIONAL.
- Instructors are present and can answer questions during that time, including questions regarding weekly practice or practice exam questions. Instructors will NOT lead a formal review of all lessons/concepts covered on the exam. It is up to you to come and ASK QUESTIONS.

| EXAMS - MANDATORY HELD IN IM WEST 208 Exams 1-4 during lecture time: 1:50–2:40 pm Exam 5 held during final exam week | | Exam Help Sessions (Optional) HELD IN BPS 2235 | | MAKE UP EXAMS – WEDNESDAYS 7-7:50 PM HELD IN BPS 1425 | |
|--|---------------------------|---|---------------|--|------------------|
| Exam | Exam Date | Help Session Date | Time | Make up Exam | Exam Date |
| Exam 1 | 9/22/25 (M) | 9/19/25 (F) | 3:15 - 4:15pm | Exam 1 | 9/24/25 (W) |
| Exam 2 | 10/13/25 (M) | 10/10/25 (F) | 3:15 - 4:15pm | Exam 2 | 10/15/25 (W) |
| Exam 3 | 10/27/25 (M) | 10/24/25 (F) | 3:15 - 4:15pm | Exam 3 | 10/29/25 (W) |
| Exam 4 | 11/10/25 (M) | 11/7/25 (F) | 3:15 - 4:15pm | Exam 4 | 11/12/25 (W) |
| Exam 5 | 12/10/25 (W, Finals Week) | 12/8/24 (M) | 3:15 - 4:15pm | Exam 5 | N/A |

TIPS TO SUCCEED IN PSL 431 (aka how other students aced this class):

- 1) **READ RECOMMENDED TEXTBOOK SECTIONS BEFORE CLASS** so you are prepared for the lecture. Having some idea of the concepts will help you make the most of the lecture period.
- 2) **PUT LECTURE NOTES INTO YOUR OWN WORDS.** Do not just passively look over lecture notes or listen to a lecture, that is not enough. You need to actively work with the material to learn it at a sophisticated level. Past students suggest the following techniques to master the material:
 - **Re-write each lecture in your own words / pictures.** Do this within 3-5 days of the lecture, ideally after you have listened to lecture and reviewed it a few times. Handwriting works best for this because it gives your brain some time to synthesize what you are trying to learn. *(Seriously, re-writing / drawing out each lecture in your own words is Dr. Wehrwein's #1 suggestion for PSL-431 success!!!)*
 - Then, test yourself by covering up everything but the title from a lecture slide: can you describe the main "point" or process on the slide? If not, re-write and study till you can!
 - Teach a concept to someone else (this will test if you really know it...).
- 3) **WRITE OUT ANSWERS TO THE LECTURE LEARNING OBJECTIVES** without referring to the lectures or your notes. If there is anything you can't answer, then go back and study that topic. The lecture objectives identify the material that instructors are expecting you to understand for the exam, so you should know it!
- 4) **ANSWER THE WEEKLY PRACTICE QUESTIONS** without referring to the lectures or your notes. Don't just pick what you think is the right answer: write out why each option is correct or incorrect. This practice may be time consuming, but it will help you to study more thoroughly and really test what you know and don't know! If you get a question wrong, it alerts you to topics you need to study more thoroughly.
- 5) **STAY CURRENT.** Each concept builds upon the one before, so you need to keep up with the material. Try to do the previous steps within 5 days of the lecture! DO NOT wait until the week before an exam to study all of the lectures at once - you will be lost. You should be spending at least an hour studying outside of class for each hour spent in lecture and recitation.
- 6) **INTEGRATE CONCEPTS.** Simply memorizing the notes will **not** enable you to pass this class. Really. You need to be able to deeply understand the pathways, mechanisms and **connect** them to other topics/mechanisms. Re-writing lectures and learning objectives will help.
- 7) **USE REVIEW QUIZZES & PRACTICE EXAMS TO PRACTICE EXAM-LEVEL MULTIPLE CHOICE QUESTIONS.** The format of the exams/quizzes can trip students up. Practice with sample multiple choice questions in advance. Tips for this:
 - Carefully read the question. What is it asking for?
 - Next, look at each option as if it were a true / false question.
 - **Write out WHY each option is true or false. What makes it false, if anything?**
 - This process will help you identify the right option by *understanding why the other options are not right.*
- 8) **ASK QUESTIONS AND DO IT SOON!** Let your instructor know if you are having trouble with a concept. We want to help, but we can only do so if you reach out to let us know you need help!

WHY The Course is Offered In-Person:

- **Why are Lectures Offered Face to Face?** Based on feedback from previous students! They say that in-person lectures are most beneficial for keeping attention, motivation and being able to ask questions.
- **Why are In-Person Lectures ALSO Recorded and Available for Viewing Online on D2L?**
 - 1) **FLEXIBILITY:** We recognize that there may be valid times and reasons that a student cannot attend in-person lecture. If you must miss in-person lecture you still have access to the recorded lecture.
 - 2) **TO AID YOUR STUDY:** The lectures move fast and there is a lot of content. We understand that it might be too much to take in on the first viewing. Having recorded lectures available means that you can re-watch, review and pick up any concepts you might have missed on the first viewing.
 - 3) **TO SUPPORT VARIOUS LEARNING STYLES AND NEEDS:** Posting lecture recordings allows all students to review lecture content in the space and manner that best serves their learning needs.
- **Why are Recitations ONLY Offered In-Person?** Recitations allow you to practice using physiology concepts covered the previous week through case studies and activities, so you learn to “speak physiology”. We’ve found that these activities work best when face-to-face and guided by a knowledgeable TA who can answer questions on the spot.

Honors Option

Read the information on the PSL 431 Honors Option found at **D2L → Content → HONORS OPTION**. Then, if interested, email Dr Wehrwein to initiate the Honors Option process. The online Honors Option contract must be completed and filed **BY THE END OF THE DAY ON SEPTEMBER 19th, 2025** to be eligible. Any member of the PSL-431 instructor team may supervise an Honors Option, which consists of writing a 10-12 page paper on a topic agreed upon by you and instructor and is due by 5:00 PM on November 21st, 2025.

Policy on Overlapping Final Exams:

- Exam-6 will be given during the Final Exam period. This course follows the [MSU Final Exam Policy](#)
- According to University policy you may be eligible to take the exam at an alternative time **IF** you have 2 final exams scheduled at the same time **OR** you have 3 final exams scheduled on the same calendar day (e.g., 3 final exams on the same Friday; does not apply if the 3 finals are scheduled within a 24-hour period over adjacent days.)
- **If either of these situations applies to you, CONTACT DR WEHRWEIN AT LEAST 2 WEEKS BEFORE THE FINAL WEEK OF CLASSES** and she will schedule an alternate time for you to take the final exam. Requests made after this time will not be honored.
- Note: when a conflict as described above arises because of use of a common final (as in some multi-section chemistry courses), the course utilizing the common final is responsible for scheduling an alternate for those students for whom conflicts arise (as per official MSU exam scheduling policy).

Accommodations for Students with Disabilities:

- 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 (RCPD) via the [RCPD website](#) or via phone (517-884-7273). Students **must** be registered with RCPD in order to obtain an Accommodation Letter and to be considered for formal course accommodations.

- Students must inform Dr Wehrwein regarding any accommodations needed at the start of the semester or as soon as they are determined and must provide their RCPD-issued Accommodation Letter.
- Accommodation arrangements must be made at least 2 weeks prior to the exam or final. Requests received after this date will be honored whenever possible but cannot be guaranteed.

Accommodations for Students Observing Religious Holidays

Instructors made every effort to avoid having exams on major [holidays](#) observed by many adherents of that faith at MSU, when the University is open. In addition, reasonable accommodations for course assessments will be given to individual students celebrating a religious holiday on the [Religious Holiday Calendar](#). Contact Dr Wehrwein prior to the holiday / course assessment to discuss accommodations.

Accommodations for COVID-19, Serious Health Conditions, Significant Life Events

- **If you are ill with COVID-19 or another serious illness, or have an emergency or significant life event that prevents you from participating in the course:** Accommodations will be made for any student who must miss class due to a serious health situation, emergency or significant life event so that it will not harm their performance or put them at a disadvantage in the class. Contact Dr Wehrwein to discuss accommodations.

Learning Continuity Statement

Should you become unable to attend class for an extended period of time due to documented health or personal issues, contact Dr Wehrwein to discuss accommodations.

Course Continuity Statement

Should a member of the PSL 431 Instructor team be required to be absent for an extended period of time, the other instructors will deliver their course content and cover their office hours. If this occurs, students will be notified of which Instructor is responsible for the content and should be contacted about it.

Course and Instructor Evaluation:

The Student Perceptions of Learning Survey (SPLS) will be used for evaluation of PSL 431. You will receive an email in the last 5-10 calendar days of class asking you to complete the SPLS at your convenience. You have the option to decline to participate in the survey by not responding to any of the questions. We hope students are willing to provide frank and constructive feedback so the information can be used to enhance the quality of teaching in the future. MSU protects student confidentiality by reporting SPLS responses as an aggregated summary after the window closes for instructors to submit grades and responses are not reported when fewer than three students participate. More information about the SPLS is available at spls.msu.edu.

Academic Honesty Policy:

You are expected to complete assessments without assistance from any source. Students who violate MSU rules (below) may receive a penalty including, but not limited to, a failing grade on the quiz/exam or in the course

- 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](#).
- **The 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."

Grief Absence Policy:

MSU is committed to ensuring that the bereavement process of a student who loses a family member during a semester does not put the student at an academic disadvantage in their classes. Students should file a Grief Absence Request Form no later than one week after knowledge of the circumstance. This can be found at <https://reg.msu.edu/forms/formsmenu.aspx> under Student Resources → Forms → Grief Absence Request Form. Next, the college representative and student determine the expected period of absence. The college will inform Dr. Leininger, who will work with the student to make accommodations so that they are not penalized due to a verified grief absence.

Importance of Professionalism: 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. To encourage a productive learning experience for all, please practice professionalism, accountability, and transparency with your fellow students and the instructor team during PSL 431.