

Introduction to Physiology (PSL 250)
Michigan State University: Department of Physiology
Summer Semester, 2023

Instructor: John Zubek, PT, MS, DPT

Office: 3177 BPS

Office Hours:

Email: zubekjoh@msu.edu (Preferred communication method. I will get back to you the same day between the hours of 7am and 7pm)

Credit Hours: 4

Course Modality: This course is completely Online Asynchronous. Exams will also be online in D2L and require Respondus Lockdown Browser and Monitor system. Therefore, you will be required to have a working webcam for all exams.

Teaching Assistant: Thomas Turkette

Email: turkette@msu.edu

Weekly review sessions:

***IMPORTANT:.** There are **4 required online exams** which will open on Tuesday of the specified exam week and will be available until Thursday of the specified exam week (see schedule for exam dates). All exams must be taken in one sitting and will be administered remotely on D2L. Therefore, you will be required to have a reliable internet connection for each exam. More information can be found in the “Exam” section of the syllabus. Exam procedures will be communicated via email the weekend before each exam. For makeup requests, please ensure you have read through the makeup policies in the “Exam” section of the syllabus. **ALL MAKEUP REQUESTS MUST GO THROUGH JOHN ZUBEK.**

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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. Weekly recorded lectures located in D2L.
2. Lecture videos and corresponding slides will be posted on D2L prior to specified lecture topic sequence. (up to 1 to 2 days prior to schedule. I may have some up earlier but they are being developed anew).
3. Lectures will be divided into 3-5 video recordings per topic totaling 3-4 hours of lecture per topic area (4 credit hour course).
4. Expect to spend at least 2-3 hours of study per 1 hour of lecture time (Expected minimum per week: 9 hours. Expected maximum per week: 12 hours. **NOTE:** You may require more time depending on your level of preparation and prerequisite course success.)
5. Practice questions will be embedded within each lecture and will count as **completion** points. (i.e. you will NOT be penalized for incorrect answers in the lecture practice questions).
6. 4 section quizzes will be on D2L. You may use your notes, book for quizzes only. No time limit to finish the quiz but will due on the last day of the unit exam it corresponds to.
7. All exams will be online and will open on Tuesdays and close on Thursdays of designated week (see schedule).
8. We will also be using McGraw Hill Connect (free with purchase of 16th edition textbook) only as **supplementary** for practice quizzes, practice problems etc.

Required Textbook & Course Materials

Fox *Human Physiology* *16ed. ISBN 9781266687853. The textbook comes with access to McGraw-Hill Connect. The ISBN listed above is for the Looseleaf/Connect Combo and also gives you access to the textbook online. The textbook can be purchased on campus at the **Spartan Bookstore** or at the **Student Bookstore** located at 421 East Grand River Avenue. You can also purchase the course material through McGraw-Hill Connect (link to follow).

*Previous edition (15th) is ok. However, page numbers/reading sections may not correspond perfectly. You will not be able to access the Connect supplementary activities with the 15th edition. Connect is NOT required, but VERY helpful.

Required Technologies

- For specifics in computer technology required for this course click here ([google doc link](#)) and read the page that listed the technical requirements for PSL 250. You must have the requirements listed on that page to successfully watch the online videos and complete the course.

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- For problems with D2L or technical issues, you should contact the D2L Help Line at (517) 432-6200 OR (844) 678-6200. You should first go to the Helpline for any computer or technical issues. I am happy to be a backup assist but may not be able to help you in a timely manner with technical issues.
- For exams you will need to download a specific program Respondus Lockdown Browser which you will be able to download using a “dummy” link in D2L quizzes. We will have a practice run using Respondus the week prior to the first Exam.

Course Organization

The lectures for this course are all available on D2L. They will be delivered by streaming video (lecture videos cannot be downloaded and saved). Students will watch the online lectures and you will have access to downloadable powerpoint slides that correspond to the online lectures. You may print those off and take notes on the slides as you see fit. (You should have a comfortable place to write while you are watching the lectures.) From the D2L home page, you may have to “search” for **US-23PSL-250-All Sections – Introduction to Physiology** and “pin” it to your homepage. Students should be aware that the Professor may follow the activity of students on D2L.

Lines of Communication

Some news about the class will be sent as a “ Weekly Roundup” email on Mondays of each week and the same email will be posted in D2L in “Announcements”. **All students are required to check D2L Announcements regularly (every weekday)**. Students are also required to check the Schedule in this syllabus regularly (every weekday). If there are changes in the course protocol or the schedule, it will be posted on D2L in Announcements or in the Calendar. Please note that there could be changes in course protocol. It is the responsibility of all students to be aware of all Announcements and Calendar events posted on D2L about PSL 250. It is the responsibility of all students to regularly (every weekday) check their MSU email account (msu.edu email) for any communication about PSL 250.

Questions about course content should be posted on the Discussion Forums in D2L. Each Unit of material will have a Discussion Forum posted in the Unit Materials. Myself or the TA will check and respond to questions on the Discussion Forum daily (excluding weekends and holidays*). The last time I or the TA will reliably check the Discussion Forum before an exam will be the day before the exam at 5 pm. *There may be an occasional extension of this time when I am out of town and will not be able to respond to Discussion Forum questions, students will be notified of this by a posting on D2L in Announcements.

Course content questions should **FIRST** be posted in D2L Discussion boards. Other students may answer questions as well. Other students may benefit from your question so will be better served posting in D2L. **Any content questions posted in D2L will be given priority over email questions.**

Personal questions regarding the class, in order of highest to lowest preference, should be emailed to John Zubek zubekjoh@msu.edu (preferred method).

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Core Concepts or “Big Ideas” in PSL 250

Students who have completed PSL 250 should be able to explain these core concepts:

Homeostasis	The internal environment is maintained relatively constant by negative feedback control.
Cell membranes	Cell membranes allow certain substances to enter or leave the cell. Transport through the membrane is a function of cell membrane structure and electrochemical potential difference.
Organ systems	Each organ system performs an essential function for the body.
Structure/Function	Structure of an organ or organ system determines its function. Disruption in structure can lead to dysfunction.
Cause and Effect	The body acts as a biological machine governed by the principle of cause and effect.
Laws of Science	The functions of the body can be explained by laws of science (e.g. chemistry, physics) as expressed through mathematics and visual data representation.
Interaction	Organ systems interact with each other to contribute to and maintain homeostasis.
Communication	Cells in the body communicate with other cells. The nervous system, endocrine system, and locally produced chemicals are important means of communication.

The Core Concepts (“Big Ideas”) above have been modified 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.

Course level Learning Outcomes

Students who have completed PSL 250 should be able to:

1. explain the function of each human organ system.
2. explain the interrelationships of organ systems required to maintain homeostasis.
3. use models of normal function to predict responses.
4. predict the effect of a change in one or more variables on other variables in the body.
5. identify normal and select abnormal body functions.
6. interpret graphical representations of data and selected sets of clinical data.
7. explain the derivation of mathematical formulas used in physiology.
8. apply concepts learned in lecture to clinical (real world) examples.
9. describe common normal ranges of major physiologically controlled variables such as arterial blood pressure, plasma glucose, body temperature, etc.

Lecture Learning Objectives

Specific Learning Objectives are included in each lecture provided.

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Lecture Embedded questions (100 pts total)

There will be multiple embedded questions/activities within each video lecture. These will count for completion points. You will NOT be penalized for getting them wrong unless you do not take advantage of the unlimited chances to achieve correctness on each question.

Quizzes (4 x 50pts each = 200 pts total)

There will be 4 Unit quizzes opened as per schedule and can be taken at your leisure. Due date for quizzes will be the last day of the corresponding Unit exam. You may use any course resources to help you answer questions on the quiz and you may come back to the quiz multiple times before officially submitting it. However, if you wait to submit it, it will close down at the day and time specified in the schedule. No quizzes can be retaken and there will be NO makeups for missed quizzes. You would have to have to most incredible excuse for a quiz makeup since these will be available for up to 2 weeks at a time.

Exams (4 x 100 pts each = 400 pts total)

There will be 4 Unit Exams in the course (see “Schedule for material covered on each exam and the dates of each exam). The last Unit Exam (Unit 4 Exam) will be given during the last week of class for PSL 250. THERE IS NO CUMULATIVE FINAL EXAM IN THIS COURSE. ALL exams count for this course. **There are NO drops for exams.** Exams are not group activities. They are individual assessments of your knowledge and preparation.

There will be 43 exam questions (40 questions that count + 3 bonus) on each Unit Exam. Exam questions will be 2 to 5 item multiple choice, true/false, and perhaps some matching questions. You will have **60 minutes** with a **5-minute** grace period with which to complete the exam. **If you have a VISA from the RCPD office for exam accommodations, please be sure to submit that as soon as possible prior to the first scheduled exam.**

Unit Exams will be based on the learning Objectives for the course, learning objectives for each lecture, and the lecture material itself. Some questions will be similar to embedded lecture questions as well as some of the supplementary practice questions in Connect. Other questions on an exam will be entirely **NEW** questions, not based on particular practice questions, but based on Learning Objectives.

Exams will use Respondus Lockdown Monitor and Browser requiring a working webcam. You will be permitted to utilize AND SHOW BOTH SIDES TO THE CAMERA, a 3x5 index card, handwritten, ONE SIDE ONLY, during the exam. NO digital devices or other resources will be allowed on your workstation or vicinity during the exam. Any violation of the 3x5 size rule, or not showing the camera both sides when you are clearly using one will be dealt with up to and including failure of the exam. Exam specifics will be communicated closer to the exam week.

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Make-up exams - *Note All makeup requests must go through John Zubek*

Make-up exams will be given *sparingly* and only if the student provides clear documentation of a valid medical excuse or other emergency* - a slip from the emergency room or a note from a doctor's office that verifies your illness on the day of the exam would work (also see ** below); just "not feeling well" won't work. The student must contact the Professor no later than 24 hours after the time of the missed scheduled exam to make arrangements to take a make-up exam unless special circumstances (e.g. hospitalization) arise. Contacting beyond 24 hours after exam day/time (unless special circumstances) will most likely inquire additional penalty even if a makeup is warranted. If possible, it is best to contact the Professor before the missed exam to be sure your excuse is acceptable. Documentation of illness or emergency (which is required to be able to take a make-up exam) must be submitted to the Professor within 48 hours after the missed exam unless special circumstances (e.g. hospitalization) arise. Make-up exams must be taken within the same week of the missed exam date unless special circumstances arise (e.g. hospitalization) and the Instructor approves a later make-up exam date. If the student does not contact and submit documentation to the Instructor within the allotted time, the missed examination score will be recorded as 0 points (zero points).

*If you have any questions about what medical documents you will need, you should contact both John Zubek and the TA by email prior to exam day.

Examples of instances in which a makeup exam would be allowed are listed.

1. Severe illness requiring treatment
2. Severe injury requiring treatment
3. Surgery
4. Hospitalization
5. Grief absence
6. Religious observance
7. Unexpected emergency or unexpected problem (for example, loss of internet just before the exam due to a storm, tornado, earthquake...it is impossible to list all emergencies that would qualify but it would be something you cannot prepare for and affects your ability to take the exam)

All instances above except #6, require documentation. For #1-4 a letter (often called a "doctor's note") on a health provider's letterhead and signed by the health provider is required. **NOTE: Retro dated doctor's notes for an illness they did not personally evaluate you for during the period in question will not be accepted as legitimate.** For a grief absence, you must follow the MSU [Grief Absence Policy](#). Students with a religious observance request can consult the Office of the Registrar's website on [Religious Observance Policy](#). Students are expected to notify the Professor in advance if they intend to miss an exam due to a holy day of their religious faith. Following includes information about major religious holidays at the [Office of Inclusion and Intercultural Initiatives](#). For #7, find the most appropriate documentation you can (it will vary for different circumstances but you will need to provide clear evidence that the event occurred). The professor may be able to help you decide what may work for appropriate documentation for an emergency.

Here are a few **non-excusable** reasons to miss an exam (Note: this is not an exhaustive list. Further additions are at the instructor's discretion).

1. Scheduled to work (the exam schedule is known far enough in advance to request the time off)
2. But, I have to work every _____. (Makeup days will be the next available day/time within the

same week as the scheduled exam, and are ONLY for extenuating circumstances, not recurrent circumstances).

3. Not ready for the exam or had too much school work and don't think I'll be able to give this exam my best.
4. Poor internet connectivity and don't have a backup plan (be sure to have a backup location or computer option such as the MSU Library).
5. Don't want to ruin my 4.0 so I would like to take it later.
6. Contacting instructor **more** than 24 hours after one of the above unexpected emergencies.
7. Waiting until Thursday evening to take the exam when it has been open for 2 days, and something pops up suddenly. You need to plan for as many possible distractions as possible and take the exam earlier.
8. Waiting until the last possible minute to take the exam and had technical issues.

The student must contact the Professor no later than 24 hours after the time of the missed scheduled exam regarding a makeup exam unless special circumstances arise (e.g. hospitalization). If possible, it is best to contact the Professor before the missed exam to be sure your excuse will be acceptable; there may be special instances not listed above in which a makeup exam would be allowed. Required documentation must be submitted to the Professor within 48 hours after the missed exam unless special circumstances arise (e.g. hospitalization). **Makeup exams must be completed within 1 week of the last scheduled unit exam day.** If the student does not contact and present the required documentation to the Professor within the allotted times, the missed examination score will be recorded as 0 points (zero points). Students should arrange their schedules to take the agreed upon makeup exam, but if it is impossible, an oral makeup exam given at a time arranged with the Professor will be the backup plan.

***Students who are grieving a loss or tragedy and need to be absent should follow the MSU Grief Absence Policy using the following link: [MSU's Grief Absence Policy](#) and should submit a Grief Absence Request Form at the Registrar's site. Students with a religious observance request can consult the Office of the Registrar's website using the following link: [Religious Policy](#).

[Accommodations](#)

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. (This paragraph is from the Model Statements section of the RCPD website.)

[Honor's Options](#)

Unfortunately, there will not be an honor's option for this course this year.

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Grading Scale

The following grading scale will be used to determine PSL 250 grades **WITHOUT EXCEPTION** - **it will apply to all students (all students will be treated the same):**

<u>Points</u>	<u>Grade</u>	<u>Percent</u> - to allow estimation of grades during the semester (<u>Points</u> will be used to assign course grades at semester end)
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630 or above	4.0	(90% or above)
595-629	3.5	(85 - 89.99%)
560-594	3.0	(80 - 84.99%)
525-559	2.5	(75 - 79.99%)
490-524	2.0	(70 - 74.99%)
455-489	1.5	(65 - 69.99%)
420-454	1.0	(60 - 64.99%)
419 or below	0.0	(59.99% or below)

Grades and grade cutoffs are fair if you know from the outset exactly how you and all other students will be treated. The Grading Scale above shows how EVERY student will be graded in PSL 250. You should understand that if you get 629 points it will NOT be “bumped up” to give you a 4.0, nor will another student with a 594 get a 3.5, nor will another student with a 559 get a 3.0, and so on (meaning there will be no rounding or “bumping” up of any grade), that is, all grade cut offs above will be used, and a student with 419 points will receive a 0.0. At the end of the course, all students will be assigned grades according to the points they have earned in the class using the above Grading Scale. There will be no special treatment for any individual students.

You can determine your percent grade at any time by dividing the points you’ve earned by the total number of points possible in the course at that time. Contact the Professor if you have any questions about course grading. Notice: points (not percent) will be used to assign course grades at semester end (see above).

Graded Assignments: The following is the Grading Breakdown.

Lecture embedded practice questions: 100 points total

Unit Quizzes: 4 x 50 pts each = 200 points total

Exams: 4 x 100 points each = 400 points total

Course total = 700 pts.

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Extra credit: Each exam will contain 3 extra credit questions embedded within each exam. These are not automatic but getting these right would directly cancel out up to 3 questions you answered incorrectly. However, if you answered all questions correctly plus the 3 bonus questions you will achieve bonus points on the exam.

Item analysis

Each exam will be thoroughly evaluated using an item analysis technique. This includes evaluating the effectiveness of each question and the fairness of each question as determined by statistical measures (i.e. Mean, Standard Deviations and Discrimination index [DI]). If a question is answered by less than 50% of the class correctly, it will be flagged. This does not mean it will be automatically dropped from the exam. I will then look at various statistics including the DI which indicates how the top 10% of the exam performers did on the question vs the bottom 10% of exam performers. If this is really low (less than .13 or 13%) then the question may be dropped. Anyone getting that question incorrect will be made whole and points given back. Those who got the question correct (albeit by chance or knowledge) will not be given extra points beyond already achieving those points. This process just makes the question equitable for all. So not all test takers will get points back on any questions that may be dropped. **Any final decisions to drop questions is completely at the instructor's discretion.**

Academic Honesty

As stated in *Spartan Life Student Handbook* under Student Rights and Responsibilities "the student shares with the faculty the responsibility for maintaining the integrity of scholarship, grades, and professional standards". Your professor will adhere to the All-University Policy on Integrity of Scholarship and Grades in Spartan Life. Students should understand the consequences for cheating outlined in the All-University Policy, including that students who commit an act of academic dishonesty will have an Academic Dishonesty Report submitted which is added to the student's academic record and may receive a 0.0 in the course.

University Ombudsman

"The Office of the University Ombudsperson is available to assist students with any conflict or problem that has to do with being a student at Michigan State University. You may visit the Ombudsperson in 129 North Kedzie, call (517) 353-8830 or e-mail ombud@msu.edu. The Office of the University Ombudsperson is an independent, neutral, informal and confidential resource and does not accept formal complaints, nor does it provide notice to the University."

Scroll down for General Course Lecture Schedule.

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