



College of Natural Science
MICHIGAN STATE UNIVERSITY

PSL 432 Human Physiology II Syllabus, 4 Credits

Course Modality: In-person

Lectures: 1:50-2:40 PM on Monday, Wednesday, and Friday in S107 South Kedzie Hall.

Recitations: Wednesday or Thursday depending on registered section (see page 2).

Course platforms: Lecture materials and recordings will be available online through [D2L](#).

Course Description: This course covers molecular, cellular, tissue, and organ-level processes that underlie physiological control of the renal, immune, gastrointestinal, endocrine, and reproductive systems.

Safety Considerations Due to Covid-19: Follow MSU's Covid-19 Directives to keep our community safe. We intend for the course modality to remain in-person. Should the public health situation change and make it unsafe to hold in-person classes, the course will pivot to an online format.

Textbook (Required): Human Physiology: From Cells to Systems, by Lauralee Sherwood, Cengage Publishing; 9th edition. **Printed version:** ISBN #9781305616721. **Digital Version:** [Cengage.com](https://www.cengage.com). 4-month subscription ISBN #9780357700006, or 12-month subscription ISBN #9780357700013. Course Key (MTPNSCWZKQST).

Required Technologies: Students must have a computer or tablet and high-speed internet access that allows for online accessing of lecture and recitation materials on D2L. Alternatively, students can use computers available at the [MSU Computer Labs](#).

Technical Assistance:

MSU IT Service Desk at 517-432-6200, 884-678-6200, or ithelp@msu.edu.

D2L Help Site at <https://help.msu.edu> or <https://help.d2l.msu.edu>

Zoom help at MSU IT Service Desk or <https://support.zoom.us/hc/en-us>

Instructors: PSL 432 is *team-taught* by 4 instructors. **Dr. Olson is the Course Coordinator** and is responsible for organizing the course content, examinations, and grading. If you have questions about the course, please direct them to [Dr. Olson](#). If you have questions about lecture content, please direct them to the instructor who taught that particular lecture/concept.

Instructor	Email	Office Hours	Location
Karl Olson, Ph.D. Course Coordinator Instructor: GI, Endo Pronouns: he/him/his	olsonla@msu.edu	Tuesday 10:00 -11:00 AM, Or by appointment	3164 BPS bldg

Stephen DiCarlo, Ph.D. Instructor: Renal Pronouns: he/him/his	dicarlos@msu.edu	Tuesday 1:00-5:00pm Thursday 1:00-5:00pm Or by appointment	4155 BPS bldg. (laboratory) Note: to get to the lab please call 248-974-6212
Susanne Mohr, Ph.D. Instructor: Repro Pronouns: she/her/hers	mohrs@msu.edu	By appointment, please email	3165 BPS bldg
Yun Liang, Ph.D. Instructor: Immuno Pronouns: she/her/hers	Liangy40@msu.edu	TBD	TBD

Recitations & Teaching Assistants:

Please attend your registered recitation section. Attending a different recitation section requires Dr. Olson's approval.

Sec #	Day	Time	Room	TA
001	W	10:20 AM	Chemistry 127	Brett Trombley Trombl61@msu.edu
002	W	11:30 AM	Chemistry 183	Ariana Zimmerman Zimme302@msu.edu
003	W	3:00 PM	Natural Resources 1	Ariana Zimmerman Zimme302@msu.edu
004	Th	11:30 PM	Biochemistry 111	Brett Trombley Trombl61@msu.edu

Attendance Policy:

- **Lectures:** Students are expected to attend in-person lectures so that they can engage with the course content and ask questions.
- **Recitations:** Students are expected to attend weekly in-person recitation sections. Attendance is required to complete the weekly recitation quiz.

Access Course Materials and Recordings via D2L:

The [D2L](#) site "**SS24-PSL-432 - Human Physiology II-merged**" contains:

- Lecture and Recitation Materials
- Lecture recording links
- Additional study materials
- Earned Points

Lecture Format:

- There is a **total of 37 in-person lectures**. Lectures are recorded and posted to D2L. The lecture recordings are intended to supplement your learning, not to replace the in-person lectures. Glitches sometimes occur with recording so we **DO NOT** guarantee that all lectures will be recorded. In-class demonstrations will not be recorded.
- It is recommended that you download lecture materials from D2L prior to attending or watching the lecture and take notes “in your own words” to facilitate your personal understanding.
- 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 lectures or other course material without the advance written permission of the course instructor.

Recitation Format:

- There is a **total of 13 in-person recitations** that focus on challenging concepts from the previous lectures. Recitations will enable you to “actively exercise” concepts to enhance your learning.
- **Download Recitation materials and work through them PRIOR to attending the Recitation.** Preparing ahead of time will help you get the most of out the recitation.
- **There is a 10-point quiz at the end of each recitation section over the material that is covered in lectures and recitation.** The quiz will use multiple question formats including short answer, fill-in the blank, multiple choice, matching, and so-forth.

Honors Option (Only for Honors College Students):

Contact [Dr. Olson](#) if you want to complete an Honors Option in PSL 432. Any PSL 432 instructor may supervise an Honors Option and selection is based on the student’s and instructor’s interest. Typically, it involves writing an 8–10-page paper on a topic agreed upon by you and an instructor. The online Honors Option Agreement Form must be submitted by the end of the day on February 16th to be eligible.

Tutors: Contact [Dr. Olson](#) if you are interested in working with a tutor.

GRADING

There are 640 total points in this class. The points come from:

Assessment	Points	% of grade	Notes
13 Recitation Quizzes	130	20.3%	Multiple formats of questions will be used including short answer, fill-in the blank, multiple choice, matching, and others.
Topic Exam 1	100	15.6%	
Topic Exam 2	100	15.6%	
Topic Exam 3	100	15.6%	
Topic Exam 4	100	15.6%	
Topic Exam 5	100	15.6%	
Participation pts	10	1.6%	Course surveys
Total Points	640	100%	

Please see Exam Schedule on page 9.

Recitation Quizzes (130 points)

- There will be a quiz after each recitation session for a total of 13 quizzes. The quizzes will be administered during the final 10 minutes of the recitation period.
- Quiz material will consist of material that you are required to prepare for recitation (e.g. worksheet, table) and material covered in lectures.
- Recitation quiz questions will be in multiple formats including short answer, multiple choice, matching, fill-in the blank, and others.
- Make-up recitation quizzes will be administered by your recitation TA.

Topic Exams (500 points)

- There will be 5 topic exams, each worth 100 points (500 points total)
- **Four of the topic exams are scheduled on Fridays (2/2, 2/23, 3/22, 4/5) during class time (1:50 to 2:40 pm).**
- **The fifth topic exam is schedule during finals week on Monday 4/22 from 3:00 to 3:50 pm.**
- Topic exams are 50 minutes long.
- Make-up exams will be administered by Dr. Olson.

Course Grades

- Grades will be determined by the percentage of points earned out of the total possible points (640 pts). Cutoffs for grades are based on a numerical value and are **not rounded up**. For example: To earn a 4.0 you must earn 90% all possible points. $640 \text{ pts} \times 90\% = 576 \text{ pts}$ and scores just below that numerical cutoff will receive the next lower grade.
- Students earning:
 - $\geq 90\%$ of possible points will receive a 4.0.
 - 89-80% of possible points will receive a 3.0 or better.
 - 79-70% of possible points will receive a 2.0 or better.
 - 69-60% of possible points will receive a 1.0 or better.
- Petitions to re-evaluate a course grade will be considered in writing only (e-mail) and must be submitted to Dr. Olson within one week after the beginning of the semester following completion of 2024 PSL 432, according to university guidelines.

Make-Up Exams:

- Make-Up Exams are only possible if a student has a legitimate health emergency (serious illness, not a cold); serious extenuating circumstances (see grief absence policy below); or for individual students celebrating an official religious holiday on the exam date (see [Religious Holiday Calendar](#)).
- **Documentation** of the emergency must be provided by a legitimate physician on their letterhead with their signature and contact information.
- **Contact [Dr. Olson](#) as soon as possible if you must miss an exam due to a serious emergency, ideally before the exam or at latest within 24 hr of the exam. Make-ups will be negotiated solely with Dr. Olson.**
- 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.

Policy on Overlapping Finals:

- This course follows the [MSU Final Exam Policy](#)

- According to University policy you may be eligible to take the final exam at an alternative time **IF** a) you have 2 final exams scheduled at the same time; **OR** b) you have 3 final exams scheduled on the same calendar day.
- If either of these situations applies to you, contact [Dr. Olson](#) **BEFORE THE FINAL WEEK OF CLASSES** and he will schedule an alternate time for you to take the final exam.
- 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 will normally be responsible for scheduling an alternate for those students for whom conflicts arise (as per official MSU exam scheduling policy.)

Rules for Exams:

- No questions on content will be answered during the exams.
- Exams will be given in-person. Exam results 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 (email) to the relevant instructor and Dr. Olson within 1wk of the time exam results are distributed. Appeals must provide justification for why the scoring issue or alternate answer deserves to receive credit.

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). Once your eligibility for an accommodation has been determined, you will be issued a verified individual services accommodation (“VISA”) form. Students **must** be registered with RCPD in order to obtain a VISA
- Students must inform [Dr. Olson](#) regarding any accommodations needed at the start of the semester and must provide their RCPD-issued VISA.
- Accommodation arrangements must be made at least 2 weeks prior to the exam. Requests received after this date will be honored whenever possible but cannot be guaranteed.

Learning Continuity Statement: Should you become unable to attend class for an extended period due to documented health or personal issues contact [Dr. Olson](#) to discuss accommodations.

Course Continuity Statement: Should a member of the PSL 432 Instructor team be required to be absent for an extended period, the other instructors will deliver their course content and cover their office hours. If this occurs, students will be notified of which Instructor is now responsible for the content.

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. Contact [Dr. Olson](#) to arrange accommodations.

- **Other Serious Health Conditions:** Contact [Dr. Olson](#) to discuss and arrange accommodations.

Academic Honesty:

You are expected to complete all quizzes, exams and the final without assistance from any source. Students who violate MSU rules may receive a penalty grade including, but not limited to, a failing grade on the quiz/exam/final 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:

Michigan State University 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. If you require a grief absence fill out a Grief Absence Request form no later than one week after knowledge of the circumstance. This form can be found at <https://reg.msu.edu/forms/formsmenu.aspx>. The college will then inform Dr. Olson, who will then work with you to make appropriate accommodations so that you are not penalized due to a verified grief absence.

Course and Instructor Evaluation:

- The SPLS Online system will be used for evaluation of PSL 432

TIPS TO SUCCEED IN PSL 432:

- 1) **READ** the chapter to be covered before each 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) **REVIEW** your notes *after each class and before the next class*. Spending an hour out of class for each hour in class will help immeasurably
- 3) **STAY CURRENT:** because each concept builds upon the one before, you need to keep up with the material. **DO NOT** wait until the day before an exam to study--- you will be lost.
- 4) **PUT IT INTO YOUR OWN WORDS.** Don't just passively look at lecture notes or listen to a lecture, that won't help you. **You** need to actively work with the content and format it in a way that will enable you to learn it. Past students suggest the following techniques to master the material:
 - Re-write and/or make your own slides that explain concepts in **your own** words.
 - Draw pictures or diagrams
 - Think about how a change (e.g. loss or gain of a receptor, cell, protein) would change function of a pathway or tissue function.
 - Write an essay to describe a concept

- Explain a concept and/or teach it to a friend (this will test if you really know it)
- Actively work with the material. Doing so will allow you to learn it at a much deeper level which is important because you need to be able to...

- 5) 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/mechanism.
- 6) ASK QUESTIONS: Let your instructor or TA know if you are having trouble with a concept: we can't help if we don't know that there is a problem.

LECTURE & RECITATION SCHEDULE:

L# = Lecture Number (Dates in Red are Fridays)

- *Note Recitation Grouping: Indicates the predicted lectures that will be covered during that weeks' recitation.*

***RECITATION ROOM CHANGE: For Recitations 1, 2, and 3, all sections will meet in 3130 BPS bldg at their assigned times. Subsequent recitations will be held in original location.**

Dates	L#	Lecture Topic	Instructor	Reading	Recitation #
8-Jan	1	Renal Anatomy	DiCarlo	Chap 14 – The Urinary System	
10-Jan	2	Essential Renal Functions	DiCarlo		
12-Jan	3	The Glomerulus	DiCarlo		
15-Jan		Martin Luther King Day – No Class			
17-Jan	4	Proximal Tubule	DiCarlo		RECITATION 1* Jan 17/18 L#1-3 Room: 3130 BPS
19-Jan	5	Summary and Synthesis (Recorded)	DiCarlo		
22-Jan	6	Loop of Henle and Thick Ascending Limb	DiCarlo		
24-Jan	7	Distal Tubule and Collecting Duct	DiCarlo		RECITATION 2* Jan 24/25 L#3-6 Room: 3130 BPS
26-Jan	8	Review	DiCarlo		
29-Jan	9	General aspect of GI physiology, anatomy, and blood flow	Olson	Chap 16 – The Digestive System	
31-Jan	10	Regulation of GI function	Olson		RECITATION 3* Jan 31/Feb 1 L# 1-7 Room: 3130 BPS
2-Feb		Exam 1 – Renal: Covers lectures 1–8 1:50-2:40 pm			RENAL Exam 1

5-Feb	11	GI motility	Olson		
7-Feb	12	GI secretions	Olson		RECITATION 4 Feb 7/8 L#9-11
9-Feb	13	GI secretions	Olson		
12-Feb	14	Digestion and absorption	Olson		
14-Feb	15	Digestion and absorption	Olson		RECITATION 5 Feb 14/15 L#12-13.
16-Feb	16	General Endocrinology Principles	Olson	Chapter 18 – Principles of Endo	
19-Feb	17	Hypothalamus and Pituitary 1	Olson		
21-Feb	18	Hypothalamus and Pituitary 2, Growth Hormone	Olson		RECITATION 6 Feb 21/22 L# 14,15.
23-Feb		Exam 2 – GI: Covers lecture 9-15 1:50-2:40 pm			GI Exam 2
February 26th-March 1st – Spring Break					
4-Mar	19	Thyroid	Olson	Chap 19 – Peripheral Endocrine Glands	
6-Mar	20	Adrenal	Olson		RECITATION 7 Mar 6/7 L# 16-18
8-Mar	21	Endocrine Pancreas	Olson		
11-Mar	22	Whole body metabolism	Olson		
13-Mar	23	Calcium and Phosphate	Olson		RECITATION 8 Mar 13/14 L# 19-21
15-Mar	24	Male Reproductive 1	Mohr	Chap 20 – The Reproductive System and D2L	
18-Mar	25	Male Reproductive 2	Mohr		
20-Mar	26	Female Reproductive 1	Mohr		RECITATION 9 Mar 20/21 L# 22,23
22-Mar		Exam 3: Covers lectures 16 – 23 1:50-2:40 pm			ENDO Exam 3
25-Mar	27	Female Reproductive 2	Mohr		
27-Mar	28	Fertilization and Early Embryology	Mohr		RECITATION 10 Mar 27/28 L# 24-25
29-Mar	29	Sexual Differentiation	Mohr		
1-Apr	30	Pregnancy and Birth	Mohr		

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3-Apr	31	Blood Composition & Hematopoiesis	Liang	Chap 11 – The Blood	RECITATION 11 Apr 3/4 L# 26-29
5-Apr		Exam 4 Rebro: Covers lectures 24-30 1:50-2:40 pm			REPRO Exam 4
8-Apr	32	RBC and Platelets	Liang		
10-Apr	33	WBCs	Liang		RECITATION 12 Apr 12/13 L# 31/32
12-Apr	34	Immune Response		Chap 12 – Body Defenses	
15-Apr	35	Immune Response	Liang		
17-Apr	36	Complement System and Hemostasis	Liang		RECITATION 13 Apr 19/20 L# 33-35
19-Apr	37	Inflammation, Wound Healing, and Repair	Liang		
22-Apr		Exam 5: Covers lectures 31–37 3:00-5:00 pm			IMMUNO Exam 5

Exam Schedule:

- Exams are mandatory and in-person.
- Exams will be given in two locations, S107 Kedzie and “to be announced”.
- Exam location sites will be assigned and announced a few days prior to the exam.

Examination:	
Topic Exam 1 - Renal Physiology	Friday February 2 at 1:50 to 2:40 pm
Topic Exam 2 – GI Physiology	Friday February 23 at 1:50 to 2:40 pm
Topic Exam 3 - Endocrinology	Friday March 22 at 1:50 to 2:40 pm
Topic Exam 4 – Reproductive Physiology	Friday April 5 at 1:50 to 2:40 pm
Topic Exam 5 - Immunology	Monday April 22 at 3:00 to 3:50 pm*

*note change in day and time.