**Syllabus: PSL 432 Human Physiology II, 4 Credits**

**Lecture Meeting Time/Place:** M, W, F, 1:50 – 2:40 PM, 158 Natural Resources Bldg

**Final Exam Time/Place:** Monday April 30th, 3 - 5 PM, 158 Natural Resources Bldg

**Textbook:** Human Physiology: From Cells to Systems, by Lauralee Sherwood, Cengage Publishing; 9th edition. ISBN 9781305774605

* This is a soft-cover textbook that is bundled with access to MindTap and a digital version of the textbook.

**Goal of this Class:** To understand the basic molecular, cellular and tissue-level processes that underlie physiological regulation of the human body. Emphasis in PSL 432 is on renal physiology, immunology, gastrointestinal physiology, endocrinology, and reproductive physiology.

**Instructors:** PSL 432 is a *team-taught* course. There are 3 instructors for the semester. Dr. Karl Olson is the Course Coordinator. He is responsible for organizing the content of the course, examinations, and the grading of the course. If you have questions or comments about aspects of the course, please direct them to Dr. Olson. Specifically, make-up exams or other accommodations related to the time or place of exams, answering questions about exam grading, or final grades should be directed to Dr. Olson.

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| --- | --- | --- | --- | --- | --- |
| **Instructor** | **Phone** | **Email** | **Office** | **Office Hours** | **Role** |
| Karl Olson, Ph.D.  | 884-5116 | olsonla@msu.edu  | 3164 BPS | Wedn. 10-12 pmOr by appt. | Coordinator,Lecturer |
|  |  |  |  |  |  |
| Nara Parameswaran, Ph.D. | 884-5115 | paramesw@msu.edu  | 4163 BPS | By appt. | Lecturer |
|  |  |  |  |  |  |
| Susanne Mohr, Ph.D.  | 884-5114 | mohrs@msu.edu  | 3165 BPS | By appt. | Lecturer |
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**Teaching Assistants & Recitations**

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| --- | --- | --- | --- | --- | --- |
| **Section** | **Day** | **Time** | **Place** | **TA** | **Email** |
| 1 | W | 10:20 AM | 126 Chemistry | Brandon Coughlin | coughl33@msu.edu  |
| 3 | W | 11:30 AM | 155 Communication Arts |
|  |  |  |  |  |  |
| 5 | Th | 11:30 AM | 111 Biochemistry | Jonathan Kasper | kasperjo@msu.edu  |
| 6 | Th | 12:40 PM | 183 Chemistry |
|  |  |  |  |  |  |
| 4 | W | 3:00 PM | 001 Natural Resources | Matthew Lewis | lewism29@msu.edu |
| 8 | Th | 6:30 PM | 001 Natural Resources |
|  |  |  |  |  |  |

**Tutors:** Contact Dr. Olson if you are interested in working with a tutor.

**Important Dates**

* 02/02/18:Drop Deadline with Tuition Refund. No Grade Reported.
* 02/28/18: Drop Deadline, No Tuition Refund, No Grade Reported.
* After 02/28/18 a grade will be reported for all students registered in the course, regardless of whether they complete the course.

**Access Course Materials via D2L:**

* The [D2L](http://d2l.msu.edu/) folder **“SS18-PSL-432-Human Physiology II – ALL SECTIONS”** contains:
	+ Lecture and Recitation Materials
	+ Review Questions (Required and Graded)
	+ Practice Exams and Questions
	+ Lecture Recordings
	+ Points/Grades
* Lectures and Recitation materials may be in PowerPoint, Microsoft Word or PDF format (depending on instructor).

**Lecture Format:**

* Lectures are delivered live by the instructors during the scheduled class periods. Lectures will be recorded and posted for viewing on D2L.
* Glitches sometimes occur with lecture recordings and we do not guarantee that all lectures will be recorded or posted. Therefore, if you do not attend the live lecture, you are at the risk of missing material. It is recommended that you download lecture materials from D2L 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.

**Classroom Participation:**

* We will be using REEF Polling to monitor student understanding of course material and promote class attendance.
* Students are responsible for purchasing and maintaining their own REEF polling-compatible device and **ensuring that it is properly registered**. REEF Polling-compatible devices include iClickers, laptops, iPhones, iPads, and other smart devices. It is your responsibility to have your device charged and to carry extra batteries.
* Instructions for use of REEF Polling will be provided in class. Instructions are also available on the REEF website under the “Support” tab ([http://support.reef-education.com/)](http://support.reef-education.com/%29) or by simply clicking on “Register Your Device” in the pop-up window. There is also a module entitled “iClicker and REEF Polling” on the SS18 PSL 432 D2L website to help you set up REEF.
* Bonus points for participation: Maximum 20 pts. Bonus points are based on participation. Correctness of the answer is not considered. Participation for REEF questions can get you a maximum of 20 points if you have 100% participation (all classes, all questions). Partial participation will fetch you only partial credit. For example, if you participate in 90% of the classes you will receive 90% of the 20 points and so forth.

**Recitation Format:**

* Recitations are led by TAs and 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 coming to 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 recitation**. Please note there are no quizzes the week of an exam. Your lowest quiz score (out of 10) will be dropped. No make-up quizzes will be given.

**Honors Option (Only for Honors College Students)**

Contact Dr. Olson no later than February 2nd 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.

**GRADING**

There are 610 total points in this class. The points come from:

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| --- | --- | --- | --- | --- |
| **Item** | **Points** | **# of questions** | **Notes** | **% of Grade** |
| 10 Review Quizzes | 25 | 10 | 5 topics, 2 review quizzes per topic | 4% |
| 10 Recitation Quizzes | 90 | 5 per quiz | 100 pts, but drop 1 quiz | 15% |
| Exam 1 | 75 | 25 | 3 pts per question | 12% |
| Exam 2 | 75 | 25 | 3 pts per question | 12% |
| Exam 3 | 75 | 25 | 3 pts per question | 12% |
| Exam 4 | 75 | 25 | 3 pts per question | 12% |
| Cumulative Final Exam | 195 | 65 | 3 pts per question | 32% |
| **Total Points** | **610** |  |  |  |

Review Quizzes (25 points)

* There will be 2 review quizzes per topic domain (Renal, Immuno/Skin, GI, Endo, Repro) for a total of 10 quizzes.
* Each quiz is offered during an ~4-day “release window” during which you can take the quiz twice. After the release window closes the quiz CANNOT be made up.
* The review quizzes are designed to reward you for studying the topic materials in a timely fashion.

Recitation Quizzes (90 points)

* There will be 2 quizzes per topic domain (Renal, Immuno/Skin, GI, Endo, Repro) for a total of 10 quizzes. The quizzes will be administered during the final 10 minutes of the recitation period (please see schedule).
* Quiz material will consist of material that you are required to prepare for recitation (e.g. worksheet, table) and that is **covered** during the recitation.  **If you prepare for recitation and pay attention during recitation you should be able to do well on the quiz.**
* Each quiz will be composed of 5 multiple-choice questions, 2 points each
* **The lowest quiz score will be dropped in computing the course total score** (90 total points).

Lecture Exams (300 points)

* There will be 4 lecture exams, each worth 75 points (300 total points)
* Exams will be composed of 25 multiple-choice questions, each worth 3 points.

Final Exam (195 points)

* The Final will be on **Monday April 30th, 3 – 5 PM, 158 Natural Resources Bldg**
* The Final will consist of 33 multiple-choice questions from the final section of the course (Reproductive Physiology) **plus** 32 multiple-choice cumulative questions (e.g. questions from the first 4 sections of the course.)
* Each question is worth 3 points

Course Grades

* Grades (4.0, 3.5, 3.0, etc.) will be determined by the points earned out of the total possible 610 points based on a “curve.”
* The ‘curve’ will be determined by the faculty. In general:
	+ The top 10-15% of the class will receive 4.0s
	+ The top 1/3 of the class will receive grades of 3.0 or better
	+ The top 75% of the class will receive grades of 2.0 or better
	+ The faculty reserve decision on the minimum score for each grade and how to apportion the grades among the bottom 25% of the class.
* 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 2016 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).
* **Documentation** of the emergency must be provided by a legitimate physician on their letterhead with their signature and contact information. Dr. Olson reserves the right to contact the physician regarding the legitimacy of the illness/condition that caused the student to miss the exam.
* **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/final.

**Policy on Overlapping Finals:**

* Per 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 (e.g. 3 final exams on the same Friday; does not apply if the 3 finals are scheduled within a 24 hr period over adjacent days.)
* 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 and Final:**

* No electronic devices are permitted to be out on your desk during the exam/final. This includes cellular phones, music players/iPods, tablets, computers or any sophisticated personal calculators that exceeds a Four-Function capability (e.g. add, subtract, multiply, divide.)
* No questions on content will be answered during the exams. This policy is necessary because the exams will be given in two different locations with different proctors and we wish to avoid any room/proctor bias.
* Exams are computer scored based on answers on Scantron sheet. Exam results will be sent by email directly from the MSU Scoring Office to each enrolled student, usually within 1 wk of the exam date. It is the responsibility of the student to assure that his/her exam was graded correctly. These scores will be uploaded into the D2L gradebook.
* 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. You cannot appeal a question that you failed to answer on the scantron sheet.

**Academic Honesty:**

* Article 2.3.3 of the Academic Freedom Report states “The student shares with the faculty the responsibility for maintaining the integrity of scholarship, grades and professional standards.” In addition, the Department of Physiology adheres to the policies on academic honest as specified in General Student Regulations 1.0, *Protection of Scholarship and Grades;* the All-University Policy on *Integrity of Scholarship and Grades;* and Ordinance 17.00, Examinations.
* **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.**
* Remember: the course is graded on a curve. If you help your fellow students cheat, you are sabotaging the curve and your own grade. DON’T DO IT.

## 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, contact Dr. Olson and the Associate Dean of your college no later than one week after knowledge of the circumstance. Together, the Associate Dean and student determine the expected period of absence. Dr. Olson will then work with you to make appropriate accommodations so that you are not penalized due to a verified grief absence.

**Accommodations for Students with Disabilities:**

* It is the responsibility of the student to make arrangements with Dr. Olson and/or the RCPD Office (Room 120, Bessey Hall) regarding exam accommodations.
* Contact Dr. Olson regarding accommodations at the beginning of the semester. Requests for accommodations must be made at least 2 weeks prior to the exam or final, otherwise the accommodation request may not be honored.
* You will need to provide Dr. Olson with your VISA issued by the Resource Center for Persons with Disabilities (RCPD) in order to arrange for accommodations. Students **must** be registered with RCPD in order to obtain a VISA. For an appointment with an RCPD disability specialist, call 884-7273 or visit the [RCPD website](http://rcpd.msu.edu/).

**Course and Instructor Evaluation:**

* The SIRS Online system will be used for evaluation of PSL 432
* Students are encouraged to submit their opinions of the course and individual instructors at the end of each semester via SIRS Online: <https://sirsonline.msu.edu>
* Students will be required to complete the SIRS Online form OR to indicate within that form that they decline to participate. Otherwise, final grades will be sequestered for seven days following the course.
* An “Opt Out” option is possible and Student anonymity is carefully protected.

**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…
1. 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.
2. PRACTICE MULTIPLE CHOICE QUESTIONS. The format of the exams/quizzes can sometimes trip students up at first. Practice with sample multiple choice questions in advance. Tips for this:
* Carefully read the question. What is it asking for?
* Examine **each** foil: is it true or false? Reason through why or why not.
* Identify the right foil by understanding why the others are **not** right.
1. 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 which lectures will be covered in that weeks’ recitation and whether there is a quiz that week.*

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| **Dates** | **L#** | **Lecture Topic** | **Instructor** | **Reading**  | **Recitation #** | **Quiz** |
| 8-Jan | 1 | Renal anatomy and function | Parameswaran | p491-96 |   |   |
| 10-Jan | 2 | Renal anatomy and function | Parameswaran | p496-505 |   |   |
| 12-Jan | 3 | Glomerular filtration | Parameswaran | p505-517 |   |   |
| 15-Jan |   | Martin Luther King Day - No Class |   |   |   |   |
| 17-Jan | 4 |  Glomerular filtration and tubular transport | Parameswaran | p517-520 | Recitation 1 |   |
| 19-Jan | 5 | Tubular transport | Parameswaran | p535-547 | Lectures 1,2,3 | Yes |
| 22-Jan | 6 | Urinary excretion and Clearance | Parameswaran | p507-517, 520-28, 535-547 |   |   |
| 24-Jan | 7 | Regulation of sodium and water balance | Parameswaran | p507-517, 520-28, 535-547 | Recitation 2 |   |
| 26-Jan | 8 | Regulation of sodium and water balance | Parameswaran | p507-517, 520-28, 535-547 | Lectures 4, 5, 6 | Yes |
| 29-Jan | 9 | Immunology | Parameswaran | p380-85 |   |   |
| 31-Jan | 10 | Immunology | Parameswaran | p385-394 | Recitation 3 |   |
| 2-Feb |   | **Exam 1: Covers lectures 1 - 8** |   |   | Lectures 7, 8 | No |
| 5-Feb | 11 | Immunology | Parameswaran | p404-07, 415-431 |   |   |
| 7-Feb | 12 | Immunology | Parameswaran | p395-400, 413-415 | Recitation 4 |   |
| 9-Feb | 13 | Immunology | Parameswaran | p408-412, 431-438 | Lectures 9,10,11 | Yes |
| 12-Feb | 14 | Skin | Olson | p439-441, 51, 61 |   |   |
| 14-Feb | 15 | Wound Repair | Olson | p397-399, D2L | Recitation 5 |   |
| 16-Feb | 16 | Thermal Regulation | Olson | p627-635 | Lectures 12, 13, 14 | Yes |
| 19-Feb | 17 | Overview of gastrointestinal physiology | Olson | p565-570 |   |   |
| 21-Feb | 18 | Regulation and integration of gut function | Olson | p113-129, 233-241, 571-573 | Recitation 6 |   |
| 23-Feb |   | **Exam 2: Covers lectures 9 - 16** |   |   | Lectures 15, 16 | No |
| 26-Feb | 19 | Gastrointestinal motility | Olson | p573-582, 598-599, 610-613 |   |   |
| 28-Feb | 20 | Gastrointestinal secretion | Olson | p574-575, 582-592 | Recitation 7 |   |
| 2-Mar | 21 | Gastrointestinal secretion | Olson | p574-575, 582-592 | Lectures 17,18,19 | Yes |
| 5-Mar, 7-Mar, 9-Mar  | Spring Break |   |   |   |
| 12-Mar | 22 | Digestion and absorption | Olson | p60-77, 358-360, 595-610 |   |   |
| 14-Mar | 23 | Digestion and absorption | Olson | p60-77, 358-360, 595-610 | Recitation 8 |   |
| 16-Mar | 24 | General principals of endocrinology | Olson | p638-643 | Lectures 20, 21, 22 | Yes |
| 19-Mar | 25 | Hypothalamus and pituitary I | Olson  | p646-652 |   |   |
| 21-Mar | 26 | Hypothalamus and pituitary II, Growth hormone | Olson  | p652-660 | Recitation 9 |   |
| 23-Mar |   | **Exam 3: Covers lectures 17 - 24** |  |   | Lectures 23, 24 | No |
| 26-Mar | 27 | Thyroid | Olson | p665-671 |   |   |
| 28-Mar | 28 | Adrenal | Olson | p672-682 | Recitation 10 |   |
| 30-Mar | 29 | Endocrine pancreas & whole body metabolism | Olson | p685-701, 619-627 | Lectures 25, 26, 27 | Yes |
| 2-Apr | 30 | Endocrine pancreas & whole body metabolism | Olson | p685-701, 619-627 |   |   |
| 4-Apr | 31 | Regulation of food intake | Olson | p685-701, 619-627 | Recitation 11 |   |
| 6-Apr | 32 | Calcium and phosphate metabolism | Olson | p701-712 | Lectures 28, 29, 30 | Yes |
| 9-Apr | 33 | Male Reproductive 1 | Mohr | Readings on D2L |   |   |
| 11-Apr | 34 | Male Reproductive 2 | Mohr | p716-723 | Recitation 12 |   |
| 13-Apr |   | **Exam 4: Covers lectures 25 - 32** |  |   | Lectures 31, 32 | No |
| 16-Apr | 35 | Female Reproductive 1 | Mohr | p723-732 |   |   |
| 18-Apr | 36 | Female Reproductive 2  | Mohr | p736-752 | Recitation 13 |   |
| 20-Apr | 37 | Fertilization | Mohr | p736-752 | Lectures 33, 34, 35 | Yes |
| 23-Apr | 38 | Sexual Differentiation | Mohr | p732-736 |   |   |
| 25-Apr | 39 | Embryology | Mohr | p752-763 | Recitation 14 |   |
| 27-Apr | 40 | Birth | Mohr | p763-770 | Lectures 36, 37, 38 | Yes |
| 30-Apr |   | **Final Exam: Covers lectures 33 - 40 plus cumulative material** |