

CAPSTONE LABORATORY IN PHYSIOLOGY (PSL 475L)

Fall Semester, 2016

Section 001: 3:00-5:50 PM, Monday

Section 002: 10:20-1:10 PM, Tuesdays

8/31/2016-12/13/2016

Room 2164 Biomedical and Physical Sciences Building

<u>Week of</u>		<u>Laboratory</u>	<u>Topic</u>
August	31	1	Introduction (Sec. 001)
September	5	1	Introduction (Sec. 002)
	12	2	Respiratory Sinus Arrhythmia
	19	3	Electrocardiogram
	26	4	Respiration
October	3	5	Blood Pressure
	10	6	Systemic Reflexes
	17	7	Exercise/EMG
	24	8	Renal
	31	9	Glucose
November	7	10	Integrative Physiology
	14		Student Designed Experiments - Week 1
	21		Student Designed Experiments - Week 2
	28		Student Designed Experiments - Week 3
December	5		Poster Presentation
	13		Final Exam – 3-5p room TBA

Syllabus Fall 2016

Course Description: 2 Credits

Laboratory exercises in human integrative physiology. Students will perform weekly experiments on various aspects of human body function and complete a group Capstone project of their own design. Weekly assignments will include data analysis, statistics, clinical correlates, and relevant physiological principles.

Course Objectives

1. Hypothesize experimental outcomes for observable physiological phenomena.
2. Integrate physiological concepts and apply critical thinking to experimental hypotheses, design, and analysis.
3. Design and complete a novel experiment in physiology.
4. Professional success skill-building.

Course Director

Erica Wehrwein, Ph. D.

Assistant Professor of Physiology

2201J BPS

wehrwei7@msu.edu

Office hours: request appointment by email

Graduate Teaching Assistants (TAs)

Trevor Gohl (Monday)

gohltrev@msu.edu

Jaqueline Fenn (Tuesday)

fennjacq@msu.edu

Lab Manager

Valerie VanRyn

vanrynva@psl.msu.edu

Learning Assistants

Rachel Rick (Overall)

rickrach@msu.edu

Lauren Williams (Monday)

Alexis Lockett (Tuesday)

Assignments and Grading

Grades in these sections of PSL 475L will be determined from scores on:

- 9 Quizzes (10 pt each, 90 points total)
- 1 “Physiology in the News” Assignment (10 points)
- 9 Weekly Laboratory Assignments (100 pts each, 900 points total)
- 1 Grant Proposal (150 points total)
 - Outline (50 points)
 - Rough Draft (50 points)
 - Final Draft (50 points)
- 1 Poster Presentation (100 points)
- 1 Final examination (500 points)

Maximum Total Points: 1750

Grade	4.0	3.5	3.0	2.5
%	100-90	89.9 - 85	84.9 - 80	79.9 - 75
Points	1750-1575	1574-1488	1487-1400	1399-1313

Grade	2.0	1.5	1.0	0.0
%	74.9 – 70	69.9 - 65	64.9 - 60	59.9 - 0
Points	1312-1225	1224-1138	1137-1050	1049-963

Required Reading (provided on D2L)

1. PSL 475L Lab Manual
2. Selected background reading
3. Lecture notes and handouts

Suggested Supplementary Resources to aid with weekly assignment questions

1. Human Physiology: From Cells to Systems by L. Sherwood textbook (PSL310/431/432)
2. Fundamentals of Human Physiology by L. Sherwood textbook (PSL250)
3. Course-packs, slides and notes from the above courses

Attendance and quizzes

There will be a quiz at the beginning of each class that will cover the basic material relating to background information and/or basic method for the current laboratory experiment. Quizzes will be used as incentive to show up to class **ON TIME** and **PREPARED**. Please refer to the **CODE OF CONDUCT** for further instructions on expectations, as *attendance is not optional*.

You need to make arrangements at least 24 hours in advance if you know you will miss laboratory exercise. If you miss a class, you will need to provide documentation for your absence to be excused. **Missed classes without an *approved* excuse will not be granted a make up. Make up labs should be completed within 7 days of the missed lab.**

Final Examination

The final exam will be comprehensive and will consist of short essay questions based on materials from laboratory readings, lectures, and general physiological concepts. You will be given a detailed review guide to help you prepare.

Participation in Human Subjects Research.

This class uses non-invasive methods in humans that are considered safe. As is the case for all studies involving human subjects, you are not required to participate as a subject. **If you are in any way uncomfortable about a particular experiment, you can opt out of being the subject without penalty.** If you opt out, you will still need to be in class and will serve as the researcher/observer so that you have data for your lab report. This does not relieve you of obligations to participate in class, take the quiz, write the lab report, or participate in class discussions.

Honors Option

Honors options are offered in this course. If you are interested in fulfilling your requirements for your program, please talk to Dr. Wehrwein at the beginning of the semester.

Professionalism

A goal of this course is to aid in your personal development in order to promote success in a professional career. The learning objectives, structure and assignments of this course have been tailored to align with MSU Career Network's, "12 Essentials for Success" that outline core competencies that employers are looking for.

<https://careernetwork.msu.edu/files/PDF/12%20Essentials%20List.pdf>

Plagiarism

Plagiarism is ALWAYS UNACCEPTABLE and will result in action taken against you. Please refer to the following links for further information:

MSU policy on plagiarism: <https://www.msu.edu/unit/ombud/academic-integrity/plagiarism-policy.html>

MSU policy on academic dishonesty: <http://splife.studentlife.msu.edu/regulations/student-group-regulations-administrative-rulings-all-university-policies-and-selected-ordinances/integrity-of-scholarship-and-grades>

Use of Turn It In

Consistent with MSU's efforts to enhance student learning, foster honesty, and maintain integrity in our academic processes, instructors may use a tool called Turnitin to compare a student's work with multiple sources. The tool compares each student's work with an extensive database of prior publications and papers, providing links to possible matches and a 'similarity score'. The tool does not determine whether plagiarism has occurred or not. Instead, the instructor must make a complete assessment and judge the originality of the student's work. All submissions to this course may be checked using this tool.

Students should submit papers to Turnitin Dropboxes without identifying information included in the paper (e.g. name or student number), the system will automatically show this info to faculty in your course when viewing the submission, but the information will not be retained by Turnitin. Student submissions will be retained only in the MSU repository hosted by Turnitin.

SIRS Evaluations

Michigan State University takes seriously the opinion of students in the evaluation of the effectiveness of instruction, and has implemented the SIRS (Student Instructional Rating System) process to gather student feedback. This course utilizes the “online SIRS” system. You will receive an e-mail sometime during the last two weeks of class asking you to fill out the SIRS online form at your convenience. Please note the final grade for this course will not be accessible on STUINFO during the week following the submission of grades for this course unless the SIRS online form has been filled out. You will have the option on the online SIRS form to decline to participate in the evaluation of the course by clicking on the “decline” choice at the bottom of the SIRS online form and your grade will not be held – we hope, however, that you will be willing to give us your frank and constructive feedback so that we may instruct students even better in the future.

Grief Absence Policy:

<http://splife.studentlife.msu.edu/regulations/student-group-regulations-administrative-rulings-all-university-policies-and-selected-ordinances/grief-absence-policy>

The goal of this policy is to provide a mechanism to standardize, monitor, and accommodate students who request temporary absence from a course, or special accommodations for a quiz or an exam as a result of loss or serious injury of a family member (parent, grandparent, sibling, spouse, or child). **Students are directed to notify the Assoc Dean of their college and document the reason for the grief absence, and the Assoc Dean in turn is charged with notifying the student’s instructors that the bereavement event has been verified.** Ultimately, it is the student’s responsibility to make up any missed work.

CODE OF CONDUCT

- I. CLASS ATTENDANCE:** By being on time to all lab periods, students may earn up to 100 points toward their final grade through the quizzes given at the beginning of class. Since PSL475 is a “hands on” course where the primary benefit is gained through carrying out laboratory procedures, attendance is mandatory. **If you are absent and do not makeup 2 or more labs, you will fail the class.**
- a. **BE ON TIME:** I agree that it is unacceptable to show up to class late. Not only does this disrupt my professor and fellow students, but it puts my lab partner at a disadvantage. I understand that in order to be “on time,” it is best to show up a few minutes early to class. I agree to be ON TIME to class, unless I contact Dr Wehrwein, my TA, and my lab partner ahead of time OR due to extenuating circumstances. **I also understand that it is unacceptable to leave class early unless I am finished with the exercise/presentation/problem set. Points will be deducted from my assignment if I leave without completing the daily activity.**
 - b. **BEING LATE:** I understand that I will not be able to make up the quiz at the beginning of class, and therefore will forfeit the quiz points for that lab period, if I am late to class.
 - c. **MISSING LAB:** I understand that I can make up a missed lab ONLY if I have a legitimate excuse as determined by the professor and let Dr Wehrwein know at least 24 hours before the lab. I must have appropriate written documentation (e.g. a doctor’s note, medical school interview) that has been approved by Dr. Wehrwein and you **must do** the make-up lab in order to receive the possibility of earning the maximum points. An assignment cannot be turned in without completing the make-up lab. I understand that I must make the lab up within 7 days of the missed lab, preferably by attending another section of the course but also can be made up in an individually scheduled appointment with the course Learning Assistant. You will have 7 days from the makeup day to email the assignment to your TA.
- II. CLASS WORK ETHIC:**
- a. **BE PREPARED:** I agree to have read the lab ahead of time so that I am prepared during my scheduled class period.
 - b. **WORK AS A TEAM:** I agree to work as an equal team with my lab partner, and that I will show up on time and prepared for class, as to not negatively affect their grade. If a problem arises, I promise to contact my instructor as soon as possible. It is acceptable and encouraged to work together; however, all assignments MUST be unique to me and any plagiarism or copying from my partner will NOT be tolerated.
 - c. **LATE ASSIGNMENTS:** Lab reports are due at the BEGINNING of the next lab period (Fall and Spring semesters) or at the BEGINNING of the lab period on the same day of the following week (Summer semester). Late means anytime after the dropbox closes, which will be at the start of the class period. If you miss the dropbox deadline, there is a late assignment dropbox and you should also email your TA to notify them. An assignment one day late will receive 80% of earned points; 2-7 days late will result in 50% of earned points; after 7 days no points will be awarded. No assignments will be accepted if they are more than 7 days late. *To avoid any technical issues causing a late assignment (such as a D2L issue), I can also email directly to my TA by the assignment due date/time.*
- III. MUTUAL RESPECT:**
- a. **CELL PHONES:** I agree that the use of a cell phone and/or other internet device during class is unacceptable. I agree to not use such things during my class period.
 - b. **LECTURE:** I agree to give my full attention during the lecture at the beginning of class, and that side conversations are not only inappropriate, but disrespectful.
- IV. CHEATING:**
- a. **GENERAL:** I understand that PSL475 holds a no tolerance policy to cheating (which includes plagiarism). This will result in action taken against me: from a penalty grade to failing the course. Direct quotes from articles, websites, peers or other sources will be considered as plagiarism and will not be accepted. All answers submitted must be in your own words.
 - b. **QUIZZES/EXAMS:** I agree that cheating during the final exam and quizzes is unacceptable and will result in action taken against me.
 - c. **LAB REPORTS:** I agree that copying the work of others is unacceptable and will result in action taken against me; this includes plagiarism. If you turn in any work from another student as part of your weekly assignment (ranging from a sentence to a full answer to a full report), you will get a zero on that assignment, have to write a reflective essay, will be reported to the academic integrity office and will need to take an online course on academic honesty. Turning in the work on another as your own is considered a serious offense by the university and will not be tolerated.
 - d. **POSTER PRESENTATIONS:** I agree that cheating by copying the work of others is unacceptable and will result in action taken against me.

Print Name:

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Signature:

Date:

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