

INTRODUCTORY PHYSIOLOGY - PSL 250 (001)

COURSE SYLLABUS - SPRING 2016

MICHIGAN STATE UNIVERSITY

Instructor Information

Instructor: Prof. Martin D. Spranger, Ph.D.
Office Location: 2201-H Biomedical Physical Sciences Bldg.
Office Phone: (517) 884-5044 (preferably during office hours)
PSL Office Phone: (517) 884-5051 (leave a message with office personnel)
Email Address: mds@msu.edu (preferred method of contact)
Office Hours: TBA (or by appointment)

Student Information

There are over 500 students in this course. Virtually every major you can imagine is represented. There is also a very rich social, cultural and ethnic diversity. Take advantage of this! Meet, talk, study and hang-out with your classmates, no matter how socially, culturally and ethnically different they are from you.

The student to professor ratio in this course is ~550:1. It would be nearly impossible for me to reach out and develop a rapport with each and every one of you this semester. However, I refuse to consider you just an ID#. I actually argue there is at least one advantage to this "lopsided" ratio. That is, it would be essentially effortless for you to develop a rapport with me. There is only one of me. So, ask questions in class, chat with me at the podium after lecture, come to office hours, email me or just randomly stop by my office to introduce yourself and chat...about anything!

Course Information

Lecture Location: B115 Wells Hall
Lecture Times: Tuesday & Thursday
12:40 - 2:30 PM

Required Materials:

1) ISBN Bundle: 9781305301795

√ *Fundamentals of Human Physiology*, 4th ed., by L. Sherwood
(ISBN: 9781305301795 - loose-leaf version)

2) Top Hat subscription (\$20 fee) (see pp. [11-12](#) for details)

3) Wi-Fi device (e.g., laptop, tablet, iPad, iPhone, Droid, etc.)
(see pp. [11-12](#) for details)

Course Website: www.d2l.msu.edu (see pp. [13-14](#) for details)

Recitation Times: TBA (see pg. [11](#))

Teaching Assistants:

☞ Graduate Teaching Assistant (GTA): Gizem Kurt (kurtgize@msu.edu)

Course Description

This is a non-prerequisite, non-majors, yet very **intensive** course that thoroughly covers the fundamental mechanisms and processes of human physiology. The underlying physiology of the entire human body will be covered in this 4 credit hour, 14 week course. Aside from discussing the systems of the human body by exploring their functionality at all levels of their organization (i.e., molecular, cellular, tissue and organ), the overlying theme of this course will be that of *systems integration*. We will first study how individual organ systems work as stand-alone, functional units. As the semester progresses, we will integrate our understanding of these systems so to build a picture of the organism level of organization (i.e., you).

Learning Outcomes

If you perform very well in this course, you possess a solid understanding of basic cellular structure and function and are fully capable of...

- 1) Explaining the molecular and cellular mechanisms that underlie the normal physiological processes of all human organ systems.
- 2) Understanding the pathology of many disease states without formal coursework in pathophysiology. You learned many disease states in this course, however with your strong command of normal physiology, you have the capacity to evaluate diseases you are unfamiliar with and propose mechanistic bases for the pathology. Moreover, with your understanding of

molecular and cellular mechanisms, you can scientifically rationalize the drug therapies employed to treat these conditions.

- 3) Confidently communicating, both written and verbally, with proper terminology and pronunciation, all aspects of normal human physiology with your peers, your physician, your pharmacist and your future professors.
- 4) Serving as an undergraduate learning assistant (ULA) in this course in the future (see me about this opportunity if you 4 pt.), dominating biology/physiology sections on pre-health, professional school exams (e.g., PCAT, MCAT, etc.) and pursuing a major in physiology!

Professor's Mission

My primary mission is to provide you a quality education. You will be provided an educational opportunity that can benefit you, and the society in which you live, regardless of your career path. I will encourage you to develop strong study skills. I will constantly challenge you to think on a higher level. **I will expect your best.** And, most importantly, I will hopefully get you excited about physiology! In return, I give you a guarantee that is inherent in my design of this course. If you perform very well in this course, you will move forward with an exceptional understanding of the human body. You will have also acquired the necessary analytical thinking, reasoning and study skills required to succeed at the highest of levels in the next phase of your studies.

Course Examinations

There will be **four** lecture exams as scheduled in the lecture outline (see pg. [10](#)). Each exam will consist of 60 multiple choice and true/false type questions and be worth 150 points (2.5 points per question). The lecture exams will be semi-comprehensive. Since the major theme of this course is *systems integration*, I will ask some integrative questions. That is, important concepts from previous exams that tie into concepts on subsequent lectures will find their way into subsequent exams. I will only source information presented in class for examination questions (i.e., what I say, what is on my PPT slides and questions I ask utilizing Top Hat). I will automatically drop the lowest score of your **first three lecture exams**. You must complete the course to qualify for this dropped exam option. Lecture Exam (IV) is the Final Exam. This exam cannot be dropped. There will be **no make-up exams** offered. For whatever the reason you miss one of the first three lecture exams, this will simply be your dropped exam (in other words, you do not need to

tell why you missed the exam). The Final Exam is scheduled as designated by the Office of the Registrar for this term (see pg. 5). No other time for the Final Exam will be available, and no exceptions will be made for conflicts.

☞ Other than a couple #2 pencils, you must bring with you to each lecture exam your MSU ID Card. There are two reasons for this. One, it has your PID on it. Your grades throughout the term will be assigned and linked to your PID. You must write (and bubble in) this eight digit number (preceded by an "A") on all of your answer forms ("bubble sheets"). Two, it has your picture on it. You will be required to verify that it is indeed you that is taking your exam.

- * All exams will be held at the normal time, date and location of our normal class meetings (except the final exam: see pg. 5)
- * Answer forms (i.e., bubble sheets) will be provided to you for all lecture exams.
- * I will collect your answer forms and your exam booklet after each exam. The key for the exams can be viewed during office hours or during GTA recitation sessions. Each key will be available for your review until the next exam. You cannot take pictures of the exam. It is logistically impossible to make the Final Exam key available to everyone. Therefore, this key will not be made available for your review.
- * Any student that leaves the lecture hall during the exam will not be allowed back into the lecture hall. Therefore, your exam will be graded as you left it.
- * I have a 20/1 policy for exam tardiness. If you arrive more than 20 minutes late or after the 1st student has completed the exam and left the room (whichever comes first), you will not be allowed to take the exam. You will not be allowed to take the exam at another time or take a make-up exam. Under this circumstance, this would be your "dropped" exam. If you have already used your "dropped exam" option, or it is the Final Exam, your score will be a zero.

Top Hat (Quiz, Participation and Attendance Points)

Top Hat is a classroom response system (CRS) that I will employ during lecture to help keep you "on your toes" and engaged during lecture. Quiz, participation and attendance points via Top Hat will be worth a combined 10% of your overall course grade (50/500 points). Quizzes will account for 40% of the 10% (20/50 points), participation points 40% of the 10% (20/50 points) and attendance 20% of the 10% (10/50 points). I will post the actual points you earn for quizzes, participation and attendance on D2L. These points will be updated following each examination period. The above percentages will be calculated at the end of the semester.

- ☞ **Quizzes** will be held at the beginning of each lecture period and will consist of 4-5 multiple choice and true/false questions on material from the previous week (i.e., on a Thursday, I would not ask questions from material covered on Tuesday of that same week). Regular attendance and studying will be required to get these questions correct.
 - * Each quiz question will be worth 1.0 point for correctness.

- ☞ **Participation** questions will consist of material from the current lecture. These will generally be multiple choice and true/false questions to probe your mind, help guide your thought process as I lecture and to add impact and emphasis. Several of these question will be asked during each lecture. Being in class and participating is all that is required to get full credit.
 - * Each participation question will be worth 1.0 point for participation.

- ☞ **Attendance** will be taken at random also utilizing Top Hat. I reserve the right to take attendance the minute class begins, the minute before it ends and anytime in between.
 - * For each instance I take attendance you will receive 1.0 point.
 - * In addition, if you are not present on a given day, you will be exempt from all quiz and participation points for that day.

Missing Top Hat points can result in you losing a half-point of your grade at the end of the semester (i.e., a 3.5 versus a 4.0). While these points carry a fairly significant weight, they purely exist for your benefit. They are designed to help keep you "on your toes" and to help you get the most out of this course. **There will be no make-up opportunities for quiz, participation or attendance points** (in other words, you do not need to tell me why you missed a quiz or an opportunity for participation and/or attendance points). For Top Hat technical details see (pp. [11-12](#)).

Final Exam Schedule

- ☞ **Date/Time:** Monday, May 2 @ 12:45 - 2:45 PM
- ☞ **Location:** B115 Wells Hall

- * Please note that the Final Exam is on a ***Monday***.
- * Final Exam Policy (www.reg.msu.edu/ROIInfo/Calendar/FinalExam.aspx)

Grading

A total of **500 points** are available to be earned. 450 points for lecture exams and a combined 50 points for Top Hat (see pp. [4-5](#)). There will be no opportunities for extra credit. I may or may not adjust individual lecture exam scores. I will not adjust the overall course scores. Course grades will be determined from total point accumulation at the end of the semester. The following tables can be used to approximate your grade status throughout the term:

Grading Scale

Percent	Grade
90-100	4.0
82-89.99	3.5
74-81.99	3.0
68-73.99	2.5
61-67.99	2.0
55-60.99	1.5
49-54.99	1.0
48.99 or below	0.0

Lecture Exam	Points
(I)	/150
(II)	/150
(III)	/150
Final/(IV)	/150
Top Hat	/50
Total	/500

Disputes/Challenge Option

Students will have one week after the return of an exam to challenge a grade for any question. Failure to challenge the grade within this period indicates a willingness to accept the grade as is. The challenge should consist of a written description of why the answer is correct based on other published material that you cite.

Add/Drop Policy

It is your responsibility to understand when you need to consider dropping from a course. Refer to the Office of the Registrar (www.reg.msu.edu/ROInfo/EnrReg/Lateadds.aspx) for important dates and deadlines.

If you are passing this course, or there is no basis for me to assign a grade at the time of your official withdrawal, a "W" grade will be assigned. If you are failing at the time of the withdrawal and the deadline for an official withdrawal has passed, you will be assigned a grade of **0.0**.

General Policies

- ☞ **I will not tolerate any talking in class while I am lecturing.** This is very disrespectful to myself AND your fellow classmates. If I can hear you, so can the students around you. While I generally lecture in the front of the hall, I know what's going on in the back too, trust me. MSU policy 5.02 (<http://splife.studentlife.msu.edu/regulations/general-student-regulations>) prohibits any behavior that disrupts a class. Since I don't have time to deal with chronic behavioral issues, you will be asked to leave lecture hall on the second occurrence (you will lose any participation/attendance points offered that day as well). If someone around you is chronically disturbing you, please just let me know and considered it handled.
- ☞ I will utilize all of the class time allotted for this semester. Coming late to class late and leaving early is very distracting to myself AND your fellow classmates. If you know you are going to arrive late or leave early, please sit in the back of the lecture hall. Whenever you enter or exit the lecture hall, please be quiet and courteous.
- ☞ Cell phones and all other electronic communication devices must be placed on a silent mode of notification before entering the lecture hall. Please understand that an unattended vibrating cell phone is just as annoying as a ringing one.
- ☞ I have what is known as a zero-tolerance rule for cheating. If you are caught cheating, you will get a zero for that exam (under this circumstance, this zero cannot be used as a "dropped" exam). If I take your exam from you, I have already caught you cheating on several independent occasions and have enough evidence and witness to support to seek university disciplinary action. Leave the lecture hall immediately if I take your exam from you. You can contact me via email later to set up a time to come see me and discuss the situation.
- ☞ Laptops, tablets and iPads can be very helpful devices in the lecture hall. You could use one to enhance slide visualization and/or note taking. However, other than running Top Hat, you are prohibited from "surfing" the internet during my lectures. Please leave the lecture hall if you are compelled to do so.
- ☞ I am happy to write a letter of recommendation for any student that earns a 4.0 in my course AND demonstrates strong personal characteristics. I can only determine the latter if you develop a rapport with me. Building strong, professional rappsorts is key to becoming a professional.
- ☞ When emailing me, address me, write without utilizing texting acronyms and shorthand, use spellcheck and always sign with your name. These simple efforts go a long way, regardless of who the recipient of your email is. Please put "physio" in the subject of the email too.

Academic Integrity

Article 2.3.3 of the Academic Freedom Report states that "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 honesty 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* (see *Spartan Life: Student Handbook and Resource Guide* and/or the MSU web site: www.msu.edu).

Therefore, unless authorized by me, you are expected to complete all course assignments, including homework, lab work, quizzes, tests and exams, without assistance from any source. You are expected to develop original work for this course; therefore, you may not submit course work you completed for another course to satisfy the requirements for this course. Also, you are not authorized to use the www.allmsu.com web site to complete any course work in this course. Students who violate MSU academic integrity rules may receive a penalty grade, including a failing grade on the assignment or in the course. Contact me if you are unsure about the appropriateness of your course work (see also www.msu.edu/unit/ombud/dishonestyFAQ.html).

☞ **Please hold yourself, and your classmates, to the highest ethical standards in this regard!**

Special Considerations for Individuals with Disabilities

Michigan State University is committed to providing equal opportunity for participation in all programs, services and activities. If you have a documented disability and verification from the Resource Center for Persons with Disabilities (RCPD), and wish to discuss academic accommodations, please contact me as soon as possible. However, it is your responsibility to provide documentation of your disability to RCPD and meet with an RCPD specialist to request special accommodation before classes start. Once your eligibility for an accommodation has been determined, you will be issued a Verified Individual Services Accommodation (VISA) form. 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. RCPD is located in 120 Bessey Hall (call @ (517) 884-7273 (884-RCPD) or email @ www.rcpd.msu.edu).

Unexpected University Closures

If the University is officially closed on an exam day, the exam will be held on the next regularly scheduled class day. Closure of the University is announced by the following mechanisms:

- 1) E-mailed alerts will come from "MSU Alert" with the address of alert@msu.edu.
- 2) Text message alerts will come from "MSU Alert" with the shortcode 23177.
- 3) MSU Police website (police.msu.edu).
- 4) MSU Police Twitter feed (twitter.com/msupolice).
- 5) MSU Police Facebook newsfeed (facebook.com/msupolice).
- 6) Local radio and television stations.

* MSU Alert can be reached @ (1-888-MSU-ALERT or 517-432-5378).

Disclaimer

This course syllabus is subject to modification at the discretion of the instructor without prior notice to the student. Lecture topics and/or scheduled times may be changed to accommodate class progress. Students must keep regular attendance and take note of any such changes as appropriate. Any changes made will first be announced in class and then posted on our D2L course webpage (see pp. [13-14](#)) under "What's New?" Any specific issue not covered by this syllabus and disputes that cannot be resolved following the guidelines present in this syllabus will be resolved using University policies.

Instructor's Advice

- 1) Want it!
- 2) Take this class seriously starting yesterday.
- 3) Be willing to make sacrifices.
- 4) Attend all lectures.
- 5) Participate and ask questions. *Get engaged!*
- 6) Use my PowerPoint slides to facilitate note-taking in class.
- 7) Read the book.
- 8) Be proactive. If you have trouble keeping up or need help, see me ASAP.
- 9) Rewrite your notes while re-listening to the lectures and reading the book.
- 10) :-)

Lecture Outline

DATE	LECTURE TOPICS	READINGS
T/12 TH/14	January Introduction to Physiology Molecular Level of Organization	Chapter 1, 16 (pp. 486-492) Appendix B
T/19 TH/21	Molecular Level of Organization Cellular and Tissue Levels of Organization	Chapters 2 & 3
T/26 TH/28	Cellular and Tissue Levels of Organization Integumentary System	Chapter 11 (pp. 337-339)
T/02 TH/04	February LECTURE EXAM (I) Nervous System Cells	Chapter 4 & 5 (pp. 107-112)
T/09 TH/11	Nervous System Cells Central Nervous System	Chapter 5 (pp. 112-137)
T/16 TH/18	Central Nervous System Peripheral Nervous System (Afferent)	Chapter 6
T/23 TH/25	Peripheral Nervous System (Afferent) Peripheral Nervous System (Efferent)	Chapter 7 & 8 (pp. 214-217)
T/01 TH/03	March LECTURE EXAM (II) Muscle Physiology	Chapter 8
M/07 - F/11	Spring Break (no classes)	
T/15 TH/17	Muscle Physiology Cardiovascular System (Heart and Vasculature)	Chapters 9 & 10)
T/22 TH/24	Cardiovascular System (Heart and Vasculature) Cardiovascular System (Blood)	Chapter 11 (pp. 297-309)
T/29 TH/31	Immune System Endocrine System	Chapter 11 (pp. 309-341) Chapter 4 (pp. 91-103) & 17
T/05 TH/07	April LECTURE EXAM (III) Endocrine System	
T/12 TH/14	Respiratory Physiology Renal Physiology	Chapter 12, 14 (pp. 426-434) & Appendix D
T/19 TH/21	Renal Physiology Digestive System	Chapter 13, 14 (pp. 426-434) & Appendix D
T/26 TH/28	Digestive System Reproductive Physiology	Chapter 15 & 16 (pp. 482-486) Chapter 18
M/02	May LECTURE (FINAL) EXAM (IV)	

Recitation Sessions

There will be one graduate teaching assistant (GTA) assigned to this course this semester (see pg. 2). The GTA will help organize the class into smaller groups for weekly (optional), student-centered learning opportunities. The GTA will also manage and run Top Hat. I will introduce the GTA and talk more about the recitation (review) sessions the first day of class. Once the GTA establishes their review session times/locations, this information will be posted on D2L.

Top Hat (Technical Information)

I will utilize the classroom response system (CRS), Top Hat, to administer daily quizzes, to pose spur-of-the-moment questions during lecture for participation points and randomly take attendance. For quiz, participation and attendance points, you will respond to these multiple choice or true/false type questions by submitting your choices with your Wi-Fi device (e.g., laptop, tablet, iPad, iPhone, Droid, etc.). As a result, you will receive real-time, in-class feedback on not only your performance, but the entire class' performance. This type of feedback is invaluable!

Top Hat can be found @ tophat.com. A link to sign up (\$20 fee) for our Top Hat course will be emailed to you approximately one week prior to the first day of class. You can register prior to receiving this invitation utilizing the following information:

- ☞ Course Name: **Introductory Physiology (PSL 250) - Spring 2016**
- ☞ Direct URL: **<http://app.tophat.com/e/927682>**
- ☞ 6-digit course code: **927682**

You **must be registered** for our Top Hat course (tophat.com/e/927682) by **01/12/15** to start receiving participation/attendance points. If you do not register for our Top Hat course by this date, you cannot get points retroactively.

- * When registering, Top Hat asks for your "student ID." Please enter your net ID, not your APID. Your net ID is merely your MSU email minus the "@msu.edu." For example, my MSU email is mds@msu.edu. Therefore, my net ID is mds. Therefore, my Top Hat "student ID" is mds.

Once registered, you will be able to earn quiz and participation points by responding to my in-class questions in one of three ways:

- 1) Via your laptop, tablet or iPad running our specific Top Hat course (tophat.com/e/927682) on a web browser.
- 2) Via text message. Text your responses to 1-(315)-636-0905.
- 3) Via the free Top Hat mobile application available at the App Store for iPhones/iPads and Google play for Android phones/Android tablets.

* Response times for questions and attendance will be limited. Therefore, you should always have the Top Hat webpage/application open on your Wi-Fi device or the phone # (1-(315)-636-0905) saved as a favorite on your phone for text messaging.

* If you are having problems with connectivity, you can always submit your responses via "off-line mode."

For random attendance points, a code will be presented on the screen in class and you can submit that code via the three mechanisms listed above to get credit.

If you have someone else use your Wi-Fi device for you when you are not in class, this is a violation of MSU academic integrity policies. If caught in such behavior, both parties (you and your "friend" assisting you) will lose all participation AND attendance points for the semester and will be reported for academic misconduct.

For technical support contact: support@tophat.com or 1 (888) 663-5491

D2L Information

D2L (Desire 2 Learn) will serve as our course website and can be found @ d2l.msu.edu. Once there, you can log in using your MSU ID and password. After logging in, you will see a link to the specific webpage for this course. If you do not see this link, check with The Registrar to make sure that you are officially enrolled in the course and D2L. If you have any technical issues with D2L, please do not contact me, call Academic Technology Services @ 517-355-2345.

I highly encourage you to check this website daily for any potential announcements under "What's New?" This will be another means by which I can communicate with you important information regarding the class. The **course syllabus**, **my PDF lecture slides** and **audio lecture recording files** can be located by clicking the "content" link. Every effort will be made to provide the PDFs on D2L a day or more

before class. My in-class lecture slides are in PPT format (and many slides are animated). However, I save my PPT files as PDFs and upload them to D2L in that format for you. As such, you will not see the animated slides outside of class. So, come to class! I will upload the PDFs for you in two different formats: 1) two slides per page and 2) three slides per page with lines for note-taking. It is up to you which ones you prefer, I am merely providing you options. Because of the vagaries of electronic recording, I cannot guarantee that all classes will be recorded. I am not saying that this will be a chronic issue, but if you are concerned, I recommend recording the lectures with your own recording device. I do not video capture. I feel that regular attendance is essential to success in my course and streaming my lectures at home is inconsistent with this philosophy. You can view your **Lecture Exam and Top Hat points** throughout the term by clicking on the "assessment" link and then the "grades" link located in the drop-down box.