

**INTRODUCTORY PHYSIOLOGY - PSL 250 (001)
COURSE SYLLABUS - SPRING 2019
MICHIGAN STATE UNIVERSITY**

Instructor Information

Professor: Dr. Martin D. Spranger, Ph.D.
Office Location: 2201-H Biomedical & Physical Sciences (BPS)
Office Phone: (517) 884-5044 (preferably during office hours)
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Office Hours: (TBD - will be posted in D2L)

Teaching Assistant Information

TA & Top Hat Manager: Austin Wellette-Hunsucker, B.S.
Email Address: wellette@msu.edu
Recitation Times: (TBD - will be posted on D2L) (see pg. 11)

Student Information

There are approximately 450 students in this course. Virtually every major is represented. There is also a rich social, cultural and ethnic diversity. Take advantage of this! Meet, talk, study and hang-out with your classmates, no matter how different they are from you.

The student to professor ratio in this course is ~450:1. It would be impossible for me to reach out and develop a rapport with each and every one of you this semester. However, 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 Days/Time: Tuesday & Thursday @ 12:40 - 2:30 PM

Course Website: www.d2l.msu.edu (see pg. 12 for details)

Required Materials:

- 1) Anatomy & Physiology, by J. Grodon Betts, et al.
This is an open-source book available by OpenStax for **free** online (ISBN 1947172042) or in print (ISBN 1938168135) at a very low cost.
Get your book @: (<https://openstax.org/details/anatomy-and-physiology>)
- 2) Top Hat subscription (\$24 fee) (see pp. 5, 11-12 for details)
- 3) Wi-Fi device (e.g., laptop, tablet, iPad, iPhone, Droid, etc.)
(see pp. 11-12 for details)

Recommended Resources:

- 1) Human Physiology online book, by Wikibooks
(https://en.wikibooks.org/wiki/Human_Physiology)
- 2) Biology & Physiology Lessons and Practice, by Khan Academy
(<https://www.khanacademy.org/science>)
- 3) Anatomy & Physiology YouTube videos, by CrashCourse
(https://www.youtube.com/playlist?list=PL8dPuuaLjXtOAKed_MxxWBNaPno5h3Zs8)

Course Description

This is a non-prerequisite, non-majors, yet **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 **five** lecture exams as scheduled in the lecture outline (see pg. 10). Each exam will be worth 60 points and consist of 60 multiple-choice and true/false type questions. Since the major theme of this course is *systems integration*, important concepts from previous exams that tie into concepts on subsequent lectures will find their way into subsequent exams. Exam V is the Final Exam, but is not cumulative. 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 via Top Hat).

To help you recover from your worst exam performance, your lowest exam score will be automatically replaced by the average score of all five of your exams. You must take all exams to be eligible for this adjustment. There will be no make-up exams offered except for University excused absences such as hospitalization or death of an immediate family member.

☞ Exam Logistics

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 scoring 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. 6)
- * Scoring sheets will be provided to you for all exams.
- * I will collect your scoring sheets and your exam booklet after each exam. The key for the exams can be viewed during office hours or during TA recitation sessions. Keys will be available for your review only up until the start of the material for the next exam. You cannot copy or take pictures of the exam keys.
- * 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 receive a zero (under this circumstance, this zero cannot be replaced by the average of your five exam scores).

☞ Final Exam Conflict Policy

Per University policy (<https://reg.msu.edu/roinfo/calendar/FinalExam.aspx>), no student is required to take more than two Final Exams during any one day of the final examination period. If you have three final exams on the day of our Final Exam, or another final exam at the same time as our Final Exam, you need to contact the Academic Student Affairs Office of your College to obtain documentation that verifies this. If your major is in the College of Natural Science, contact purdyh@msu.edu (517-355-4475). When you provide me this documentation (in person or via email), I will arrange an alternate time for you to take our Final Exam. I must be in receipt of this documentation by **01/14/19** in order for you to be considered for an alternate Final Exam time.

Top Hat (Quiz, Participation and Attendance Points)

Top Hat (TH) is a classroom response system that I will employ to help keep you "on your toes" and engaged during lecture. **Quiz (Q), Participation (P) and Attendance (A) Points** offered via TH will be worth a combined 20% of your overall course grade (Q - 40% of the 20%; P - 40% of the 20%; A - 20% of the 20%). I will post the numerical points you earn for Q, P and A on D2L 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 approximately 5 multiple-choice and true/false questions on material from the previous week. Regular attendance and studying will be required to perform well on the quizzes.
 - * Each quiz question will be worth 1.0 point for correctness.
- ☞ **Participation** questions will consist of material from the current lecture. Several of these questions will be asked during each lecture. These will be multiple-choice and true/false questions designed to probe your mind, help guide your thought process as I lecture, and to add impact and emphasis. 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 utilizing TH. 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 miss attendance on any given day, you will be exempt from all quiz and participation points offered for that day.**

Missing TH 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 aid in your learning experience. **No make-up opportunities will be offered, under any circumstances, for quiz, participation or attendance points** (in other words, please do not contact me with an excuse why you missed a quiz or an opportunity for participation or attendance points - **I will not accept any excuse**). For TH technical details see (pp. 11-12).

Final Exam Schedule

☞ **Date/Time:** Wednesday, May 1 @ 10:00 AM - 12:00 PM

☞ **Location:** B115 Wells Hall

* Please note that the Final Exam is on a **Wednesday** and at **10:00 AM**.

* Final Exam Policy (www.reg.msu.edu/ROInfo/Calendar/FinalExam.aspx)

Grading

A total of 375 points are available to be earned: 300 points for lecture exams and 75 points for Top Hat (see pg. 5). 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

90-100	4.0
85-89.99	3.5
80-84.99	3.0
75-79.99	2.5
70-74.99	2.0
65-69.99	1.5
60-64.99	1.0

59.99 or below	0.0
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Lecture Exam	Points
I	/60
II	/60
III	/60
IV	/60
V (Final)	/60
Top Hat	/75
Total	/375

Disputes/Challenges

You will have one week after I post exam scores and Top Hat points to D2L to challenge these grades/points. Failure to challenge within this period indicates a willingness to accept your grades/points assigned on D2L as is. I will not dispute grades/points at the end of the semester. All of these issues must be resolved one week after the posting of these grades/points to D2L.

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 people around you. MSU policy prohibits any behavior that disrupts class (<http://splife.studentlife.msu.edu/regulations/general-student-regulations>). I don't have time to deal with chronic behavioral issues. You will be asked to leave the lecture hall on the second occurrence you disrupt class, and you will be unable to return to lecture until you schedule a personal meeting with me. If someone around you is chronically disturbing you, please let me know in private.
- ☞ I will utilize all the class time allotted for this semester. Coming late to class 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 use the back doors, and please be quiet and courteous.
- ☞ I have zero-tolerance for cheating. If you are caught cheating, you will get a zero for that exam (under this circumstance, this zero cannot be replaced by the average of your five exam scores). If I take your exam from you, I have already witnessed you cheating on several independent occasions and have

enough evidence/witness 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 schedule a meeting with me in person to discuss the situation.

- ☞ 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 relationships is key to becoming a professional.
- ☞ When emailing me, please 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).

You are expected to complete all course assignments, including quizzes and exams, without assistance from any source. Students who violate MSU academic integrity rules may receive a penalty grade, including a failing grade on the assignment or in the course (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

MSU 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. 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 period. University closure is announced by the following mechanisms:

- 1) MSU Alert*: email (alert@msu.edu); text message (shortcode 23177)
- 2) MSU Police: (police.msu.edu; twitter.com/msupolice; facebook.com/msupolice)
- 3) 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 pg. 13) 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 text.
- 8) Be proactive. If you have trouble keeping up or need help, see me ASAP.

9) Diligently and consistently apply the study skills presented in the Study Skills Video provided to you.

10) :-)

Lecture Outline

Day	Date	Topic	Chapter/Reading
T	01/08	Introduction to Physiology	1 (1.1 - 1.5), 26 (26.1, 26.4)
TH	01/10	Molecular Level of Organization	2 (2.1 - 2.5)
T	01/15	Molecular Level of Organization	
TH	01/17	Cellular & Tissue Levels of Organization	3 (3.1 - 3.2), 4 (4.1 - 4.2)
T	01/22	Cellular & Tissue Levels of Organization	
TH	01/24	Review (time permitting)	
T	01/29	Exam I	
TH	01/31	Nervous System (Cells)	12 (12.1 - 12.5)
T	02/05	Nervous System (Cells)	
TH	02/07	Nervous System (CNS)	13 (13.2), 12 (12.1), 16 (16.2)
T	02/12	Peripheral Nervous System (Afferent)	13 (13.4), 14 (14.1), 16 (16.3)
TH	02/14	Peripheral Nervous System (Afferent)	
T	02/19	Exam II	
TH	02/21	Integumentary System	5 (5.1 - 5.4)
T	02/26	Peripheral Nervous System (Efferent)	15 (15.1 - 15.4), 14 (14.3)
TH	02/28	Peripheral Nervous System (Efferent)	
M-F	03/04-03/08	Spring Break (no classes)	
T	03/12	Muscle Physiology	10 (10.1 - 10.9), 11 (11.1)
TH	03/14	Muscle Physiology	
T	03/19	Exam III	
TH	03/21	Cardiovascular System (Heart/Vasculature)	19 (19.1 - 19.4), 20 (20.1 - 20.6)
T	03/26	Cardiovascular System (Heart/Vasculature)	
TH	03/28	Cardiovascular System (Blood)	18 (18.1 - 18.6)
T	04/02	Respiratory Physiology	22 (12.1 - 12.6), 26 (26.5)
TH	04/04	Respiratory Physiology	
T	04/09	Exam IV	
TH	04/11	Endocrine System	17 (17.1 - 17.11), 6 (6.3 - 6.4; 6.6)
T	04/16	Endocrine System	
TH	04/18	Digestive System	23 (23.1 - 23.7)
T	04/23	Digestive System	
TH	04/25	Renal Physiology	25 (25.1 - 25.10)
W	05/01	Exam V (Final) (see pg. 6 for time/location)	

** This chapter/reading list is from the OpenStax book *Anatomy & Physiology* by J. Grodon Betts, et al. I have made every effort to assign chapters/readings that cover the material that I lecture on. If you do not find a concept I covered in class in this list, search the index of the text. I am certain it is in the text. Please make me aware of this too so I can ammend the list. - MDS

Recitation Sessions

There will be one teaching assistant (TA) assigned to this course this semester (see pg. 2). The TA will help organize the class into smaller groups for weekly (optional), student-centered learning opportunities. The TA will also manage and run Top Hat. I will introduce the TA and talk more about the recitation (review) sessions the first day of class.

Top Hat (Technical Information)

I will utilize the classroom response system, Top Hat, to administer daily quizzes and to pose spur-of-the-moment questions during lecture for participation points. For quiz and participation 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 (\$24 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: **PSL 250 - Spring 2019**
- ☞ Direct URL: **<http://app.tophat.com/e/966853>**
- ☞ 6-digit course code: **966853**

You **must be registered** for our Top Hat course (tophat.com/e/966853) by **01/08/19** to start receiving **Q, P, A** points. If you do not register for our Top Hat course by this date, you will not get points retroactively. No exceptions will be made.

**** 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 following three ways:

- 1) Via your laptop, tablet or iPad running our specific Top Hat course (tophat.com/e/966853) 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 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 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. This will be another means by which I can communicate with you important information regarding the class. The **course syllabus**, **PPT lecture slides** and **audio lecture recording files, etc.** can be located by clicking the "content" link. Every effort will be made to provide the PPTs on D2L a day or more before class. 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

exam grades and Top Hat points throughout the term by clicking on the "assessment" link and then the "grades" link located in the drop-down box. Please note that while I will post your exam and Top Hat scores on D2L, I do not use the D2L grade calculator. I merely use the D2L gradebook to post your scores. I calculate grades on a spreadsheet on my personal computer.

FAQs

Q1. What information will be covered on the exams?

A1. 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 via Top Hat).

Q2. How do I succeed in this course?

A2. Watch the Study Skills Video posted on our D2L page. In short:

- I. Come to all classes.
- II. Take jot notes in class.
- III. Re-listen to the lectures and take detailed notes.
- IV. Make sense of your notes (i.e., learn).
- V. Rewrite your notes in your own words in a conversational manner.
- VI. Come and see me or your TA to see if you are on the right track with your study process.
- VII. Don't wait for the second exam to get serious.
- VIII. Stay on track and don't fall behind.

Q3. Is the Final Exam a cumulative exam?

A3. No. The Final Exam is just Exam V.

Q4. Can I drop my lowest exam score?

A4. No. However, I will replace your lowest exam score with the average score of all of your five exams.

Q5. Will I get a copy of my exam back to review?

A5. No. Your exam booklet will not be returned to you. However, you will get a detailed analysis of your scoring sheet emailed to you, and you will be able to compare this to the key available in my office or with the TA during review sessions. The key for each exam will only be available for review until the start of the material for the next exam. You cannot copy or take pictures of the key.

Q6. Can I make-up an exam if I miss it?

- A6. Make-up exams are only offered for University excused absences such as hospitalization or death of an immediate family member.
- Q7. Can I take an exam if I arrive late?**
- A7. It depends on how late. 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.
- Q8. What do I do if I get an email that I am not properly enrolled in Top Hat?**
- A8. Follow these instructions to get it right:
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.
- Q9. If I miss a class, will I be excused for the Top Hat points that I missed?**
- A9. No. No make-up opportunities will be offered, under any circumstances, for quiz, participation or attendance points (in other words, please do not contact me with an excuse why you missed a quiz or an opportunity for participation or attendance points - I will not accept any excuse).
- Q10. How much will missing one class affect my grade?**
- A10. Essentially not at all. See the document posted on our D2L page that shows you a sample calculation.
- Q11. If I end up with an 89.99% in the course, will my grade be rounded-up to a 90%?**
- A11. No. I may or may not adjust individual lecture exam scores, but I will not adjust the overall course scores.
- Q12. Can I do a project/paper to improve my grade?**
- A12. No.
- Q13. How soon will my exam scores be posted?**
- A13. Usually within 24-48 hours.
- Q14. Can I record the class?**
- A14. Yes, I encourage it, but I will record all of my lectures and post the audio files on our D2L page immediately after each lecture. I do not video capture.
- Q15. Do I have to print out the PPT lecture slides?**
- A15. No. However, I encourage that you do and bring them to class to take jot notes on. If you decide to print them you have several options available. You may print black or grey scale rather than color and you may print 2, 4, or more slides to the page. You may also download the outlines to your computer and annotate them during lecture.
- Q16. Does anyone ever get a 4.0 in this course?**
- A16. Yes, plenty. 14% of my class earned 4.0s last semester.