HUMAN PHYSIOLOGY BIOL 2420 FALL semester, 2017

Welcome to Human Physiology! This is an introductory course that explores how selected parts of the human body function. This course will introduce some of the known functions of **organ systems**, **organs**, **tissues** and **cells** found within the human body.

Physiology is the study of normal body function, whereas **pathophysiology** is the study of abnormal body function, such as occurs in some diseases. **Many aspects of human physiology remain poorly understood**, and improving our understanding of physiology is a major goal of ongoing scientific research (conducted by physiologists).

Please note that human physiology is an enormous and very complex topic, and we will not be able to cover every aspect of it within one semester (not even close).

THIS SYLLABUS IS NOT A CONTRACT. Dr. Adams reserves the right to revise any aspect of this syllabus at any time.

FACTUAL INFORMATION. The primary learning objective of this course is to acquire factual information about human physiology. Because of this, **you will be expected to memorize considerable detailed information**. **You will also be expected to understand important concepts and processes.**

Lecture Time & Place: **Tuesday & Thursday** **10:30 - 11:45 AM** **in BNR 102**

Laboratory Time & Place: all laboratories will be held in **VSB 219**.

Instructor: **Brett Adams, Ph.D.**

Office: **BNR 337**

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Office Hours: **Mondays 12:30 - 1:30 PM** in the **USU Library Cafe**. If this time doesn't work for you, please contact me by email (brett.adams@usu.edu) and we can arrange an appointment.

Course Fees: There is a fee of **$80** associated with the laboratory portion of this course.

Textbooks: **There is no required textbook for this course**. I have placed numerous copies of several different human physiology textbooks on reserve within the **USU Library Course Reserves** for your use. If you want to buy your own textbook, I recommend Fox's Human Physiology, 14th edition. But almost any standard human physiology textbook would be OK, as long as it was published fairly recently (within the last 5 years).

Grading: There will be four (4) lecture exams. Your final letter grade in this course will be determined by three (3) highest-scoring lecture exams, plus your total accumulated lab points from the 11 laboratory exercises and the one (1) lab final exam.

How to Earn Points from Lecture: There will be four (4) exams over material presented in lecture. ***Your lowest exam score will be automatically dropped by Canvas and will not count toward your grade.*** If you miss an exam - ***for any reason*** - that exam score (zero points) will be dropped and will not count toward your final grade. If you miss additional exams, you will receive scores of zero points for those missed exams, and they will count towards your final grade.

PLEASE NOTE that NO make-up exams will be given. None.

Lecture exams will cover material presented during lecture. Each lecture exam will be worth approximately 100 - 150 points. On these exams, you will be responsible for **ALL** of the material presented in class, regardless of whether it is presented verbally, written on the white board, or projected on the screen. Projected lecture material will be posted on Canvas. Audio recordings of most lectures will also be posted on Canvas. Please be aware that, occasionally, audio recordings of lecture are lost and not available.

How to Earn Points from Laboratories: There are four (4) ways to earn points in lab.

1.) By attending ***ONLY*** the lab section for which you are officially registered. ***ONLY*** your regular TA is obligated to keep track of your lab points. The TAs in other lab sections don't know who you are, and they are ***UNDER NO OBLIGATION*** to record your points and send them to your regular TA. Therefore, if you don't attend your regular lab section, ***YOU WON'T GET THE POINTS*.**

2.) Up to **55 lab points per semester** can be earned by answering the **Pre-Lab Questions** (found on the last page of each lab handout) **before you attend lab** and then submitting them to your TA **when you first arrive in lab** and getting your TA to initialize them. Each set of Pre-Lab Questions is worth up to **five (5) points per week**. **I recommend that you keep these initialized Pre-Lab Questions for your records.**

3.) Up to **55 lab points per semester** can be earned by your **attendance and participation** in each laboratory activity. Make sure that your TAs know you are present and are participating in the exercise. Attendance and participation are worth **five (5) points per week**.

4.) Up to **50 lab points maximum** can be earned by taking the Lab Final Exam.

SUMMARY OF POSSIBLE POINTS AVAILABLE IN THIS COURSE:

Lecture Exams:	your ***three highest*** exam scores =	~ **340 points**
Completed & Initialized Pre-Lab Assignments:	5 points per week over 11 weeks =	55 points
Attendance & Participation in Lab Activities:	5 points per week over 11 weeks =	55 points
Lab Final Exam:		50 points
Total LAB points:		**160 points**
TOTAL POSSIBLE POINTS AVAILABLE IN COURSE:		**~ 500 points**

EXTRA CREDIT POINTS: there are NO extra credit points available in this course. **None. Zip.**

FINAL GRADES: Your final letter grade will be calculated by dividing your total number of accumulated points from both lecture and lab by the total number of possible points in the course. **The grading scheme used is:**

A	=	92.5 – 100 %
A-	=	< 92.5 to 89.5 %
B+	=	< 89.5 to 84.5 %
B	=	< 84.5 to 79.5 %
B-	=	< 79.5 to 74.5 %
C+	=	< 74.5 to 69.5 %
C	=	< 69.5 to 64.5 %
C-	=	< 64.5 to 59.5 %
D+	=	< 59.5 to 54.5 %
D	=	< 54.5 to 49.5 %
F	=	< 49.5 %

IMPORTANT INFORMATION about the grading scheme: Dr. Adams' grading scheme is considerably more generous than the USU Standard grading scheme. Additionally, his grading scheme has a **0.5% bonus** built into it. For example, the break point between a B- and a B grade occurs at 79.5% instead of at 80%. For these reasons, **DR. ADAMS WILL NOT CHANGE YOUR FINAL GRADE EVEN IF YOU ARE VERY CLOSE TO THE NEXT HIGHER GRADE.** For example, if your total percentage point score is 92.49999 %, you will get a final grade of "A-" and not “A”.

SUPPLEMENTAL INSTRUCTION: Supplemental Instruction (S.I.) sessions will be conducted by **Mr. Ryan Robbins.** Time and place to be announced later.

WEEKLY REVIEW SESSIONS: **Weekly review sessions** will be conducted by Mr. Chase Thorpe**.** Time and place to be announced later.

Disability Resource Center: If you have a condition that requires accommodation, please contact Dr. Adams and document your situation through the Disability Resource Center (DRC) **during the first week of classes**.

Requests for an incomplete (I) grade must comply with current USU regulations (see University Catalog).

LECTURE SCHEDULE. Lecture topics and order of presentation are tentative only and may be changed. Listed page readings apply only to Fox's Human Physiology, 13th edition (Fox13e), which is on reserve at the USU Library.

Date	Topic	Readings in Fox 13e
August 29	Course introduction. How to do well in this class.	pp. 4 - 10
August 31	The four (4) primary tissue types Organs & organ systems	pp. 10 - 18 pp. 19 - 21
September 5	Homeostasis & body fluid compartments (speaker: Angela Mohrman)	pg. 21
September 7	Cell structure & function	pp. 50 - 62
September 12	Transport of molecules across the plasma membrane of cells	pp. 132 - 136 pp. 142 - 149
September 14	The electrical potential across the plasma membrane of cells	pp. 149 - 153
September 19	**EXAM #1 (approximately 100 points)**	
September 21	Action potentials	pp. 172 - 180
September 26	Chemical synaptic transmission	pp. 180 - 198
September 28	The nervous system	pp. 162 - 171 pp. 153-156; pp. 180 -198
October 3	Sensory physiology	
October 5	Skeletal muscle physiology	
October 10	Endocrine physiology	pp. 317 – 331
October 12	The hypothalamus & the pituitary gland (speaker: Naima Dahir)	
October 17	**EXAM #2 (approximately 140 points)**	
October 19	NO CLASS - FOLLOW YOUR FRIDAY SCHEDULE.	
October 24	The exocrine pancreas & the endocrine pancreas	pp. 346 – 348; pp. 677 - 685
October 26	Diabetes & hormones secreted by adipose tissue	pp. 681 - 685
October 31	The respiratory system	

November 2	The cardiovascular system	pp. 331 - 337
November 7	The cardiovascular system, part two	
November 9	The renal system	
November 14	**EXAM #3 (approximately 120 points)**	
November 16	The digestive system	pp. 348 – 349?
November 21	NO CLASS - THANKSGIVING HOLIDAY	
November 23	NO CLASS - THANKSGIVING HOLIDAY	
November 28	Circadian rhythms	
November 30	Male Reproductive System	
December 5	Female Reproductive System (speaker: Marley Haupt)	
December 7	Stem cells, Reproductive cloning & Therapeutic Cloning	
December 12?	**EXAM #4 (approximately 100 points). This exam is NOT comprehensive.**	

LABORATORY SCHEDULE **ALL LABORATORIES** will be held in **VSB 219**.

August 28 & 30, Sept. 1	**NO LABS** during this first week of classes.
Sept. 4, 6 & 8	**NO LABS** this week due to **LABOR Day** on Monday, September 4th.
Sept. 11, 13 & 15	Lab Safety and Using Microscopes to Visualize Cells and Tissue (10 points possible)
Sept. 18, 20 & 22	Acidity, Alkalinity, pH Indicators, Buffers and Enzyme Function (10 points possible)
Sept. 25, 27 & 29	Nervous System (10 points possible)
Oct. 2, 4 & 6	Sensory Organs: Eye & Ear (10 points possible)**.**
Oct. 9, 11 & 13	Sensory Physiology: Hearing test, Taste exercises, Cutaneous Receptors (10 pts.).
Oct. 16, 18 & 19*	Diffusion, Osmosis & Tonicity (10 points possible) *REMEMBER to attend your Friday classes on Thursday this week, due to Fall Break Day on Friday.
Oct. 23, 25 & 27	Blood Typing, Hematocrits, and Blood Cell Counts (10 points possible)
Oct. 30, Nov. 1 & 3	Respiration and Examination of Pig Hearts and Lungs (10 points possible)
Nov. 6, 8 & 10	Electrocardiography, Blood Pressure, and Heart Rate (10 points possible).
Nov. 13, 15 & 17	Urinalysis (10 points possible). **CONFIRM your total lab points with your TA!**
Nov. 20, 22 & 24	NO LABS THIS WEEK due to THANKSGIVING HOLIDAY.
Nov. 27, 29, Dec. 1	**LAB FINAL EXAM** (worth 50 points) and evaluate your TAs.