

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.

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.**

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Office Hours: **Mondays 1:30 – 2:30 PM.** If this time doesn't work for you, please contact me by email (brett.adams@usu.edu) and I will be very happy to arrange an appointment.

Course Fees: There is a fee of \$70 associated with the laboratory portion of this course.

Textbooks: There is no required textbook for this course. I have placed numerous copies of various human physiology textbooks on reserve within the USU Library Course Reserves for your use.

Grading: Your final letter grade in this course will be determined by the total number of points that you accumulate from your 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 given 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.

No make-up exams will be given.

Lecture exams will cover material presented during lecture. Each lecture exam will be worth approximately 110 - 150 points. During 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. Most projected lecture material will be posted on Canvas. Audio recordings of most lectures will also be posted on Canvas. 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.) **BECAUSE** only your regular TAs are obligated to keep track your lab points, **ALL** of your lab points depend upon you attending the specific lab section for which you are officially registered. **Do not attend labs for which you are not officially registered.** The TAs in those lab sections don't know who you are, and they won't record your 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 TAs to initialize them. **Keep these initialized Pre-Lab Questions for your records.** Each set of Pre-Lab Questions is worth up to **five (5) points per week.**

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 =	~ 400 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: ~ **560 points**

EXTRA CREDIT OPPORTUNITIES do not exist. There is **NO** extra credit available in this course.

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 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 %

Example: if your total percentage score is 92.49999 %, you will get a final grade of "A-".

SUPPLEMENTAL INSTRUCTION: Supplemental Instruction (S.I.) sessions will be conducted by Ms. Shannon Guyman. The time and place of the twice-weekly S.I. sessions will be announced early during the semester.

WEEKLY REVIEW SESSIONS: Weekly review sessions will be conducted by Mr. Kaleb Esplin. The time and place of these weekly review sessions will be announced early during the semester.

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 30	Introduction to Physiology. Concept of Homeostasis	pp. 4 - 10
September 1	How to study for this (or any) class The primary types of body tissues Organs & Organ Systems Body fluid compartments	pp. 10 - 18 pp. 19 - 21 pg. 21
September 6	Cell Structure	pp. 50 - 62
September 8	Transport of molecules across the plasma membrane Carrier-Mediated Transport	pp. 132 - 136 pp. 142 - 149
September 13	Extracellular matrix Diffusion & Osmosis Resting Membrane Potential	pp. 132 - 133 pp. 133 - 141 pp. 149 - 153
September 15	Action Potentials	pp. 172 - 180
September 20	EXAM 1 (approximately 120 points)	
September 22	Nervous System	pp. 162 - 171
September 27	Neurotransmitters & other cell signaling molecules	pp. 153-156; pp. 180 -198
September 29	Chemical Synaptic Transmission	pp. 180 - 198
October 4	Muscle Physiology	
October 6	Endocrine Physiology (guest speaker: Lori Neuman -Lee)	pp. 317 – 331
October 11	Regulation of blood glucose concentration by pancreatic hormones.	pp. 346 – 348; pp. 677 - 685
October 13	Diabetes mellitus & Diabetes insipidus	pp. 681 - 685
October 18	EXAM 2 (approximately 140 points)	
October 20	NO CLASS - <u>Follow your FRIDAY CLASS SCHEDULE on Thursday, October 20th.</u>	
October 25	Sensory Physiology part one (guest speaker: Naima Dahir)	
October 27	Respiratory Physiology	
November 1	The Pituitary Gland & Hypothalamus region of the Brain	
November 3	Digestive Physiology (guest speaker: Alison Webb)	pp. 348 – 349?
November 8	The Immune System (guest speaker: Andrew Durso)	pp. 533 – 547?
November 10	Cardiovascular Physiology	pp. 331 - 337

November 15	EXAM 3 (approximately 120 points)
November 17	Circadian Rhythms
November 22	NO CLASS - Thanksgiving holiday
November 24	NO CLASS - Thanksgiving holiday
November 29	Renal Physiology
December 1	Male Reproductive Physiology (guest speaker: Geoff Smith)
December 6	Women's Reproductive Cycle & Contraceptive Methods (guest speaker: Beth Booton)
December 8	Stem cells, Reproductive cloning & Therapeutic Cloning
December 13	EXAM 4 (approximately 100 points) - covers material presented since Exam 3.

LABORATORY SCHEDULE ALL LABORATORIES will be held in VSB 219.

August 29 & 31, September 2	<u>NO LABS</u> during this first week of classes.
September 5, 7, 9	Lab Safety and Using Microscopes to Visualize Cells and Tissue (10 points possible)
September 12, 14, 16	Acidity, Alkalinity, pH Indicators, Buffers and Enzyme Function (10 points possible)
September 19, 21, 23	Nervous System (10 points possible)
September 26, 28, 30	Sensory Organs: Eye & Ear (10 points possible)
October 3, 5, 7	Sensory Physiology: Hearing test, Taste exercises, Cutaneous Receptors (10 pts.).
October 10, 12, 14	Diffusion, Osmosis & Tonicity (10 points possible).
October 17, 19, 20*	Blood Glucose and Cholesterol Testing (10 points possible). *Friday labs meet on Thursday due to Fall Break Day on Friday, October 21.
October 24, 26, 28	Blood Typing, Hematocrits, and Blood Cell Counts (10 points possible)
October 31, November 2, 4	Respiration and Examination of Pig Hearts and Lungs (10 points possible)
November 7, 9, 11	Electrocardiography, Blood Pressure, and Heart Rate (10 points possible)
November 14, 16, 18	Urinalysis (10 points possible). Confirm your total lab points with your TA!
November 21, 23, 25	NO CLASS - Thanksgiving holiday.
November 28, 30, December 2	<u>LAB FINAL EXAM</u> (worth 50 points) followed by evaluation of your TAs.