Welcome to the Human Physiology Lab! We’re glad you’ve decided to participate in this semester’s lab activities. This handout has been prepared for you to know and understand the policies and rules your lab instructor will maintain throughout the semester. Keep it in a safe place and refer to it whenever you have an “administrative type” question during the course.

The physiology lab exercises that you will participate in this semester have been designed to offer you the opportunity to gain practical experience with the topics being discussed in the lecture portion of the course, in a “hands on” way. Generally you can expect to receive your first exposure to most of the course content by way of your experiences preparing for your lab work each week. You will then perform learning activities and experiments that apply what you have been working on. These will challenge you to apply and use what you are learning through the lecture component of the course as practical applications.

Labs in this course are designed to give each student the opportunity to participate with their lab partners in the class by completing specific activities. This provides you with the opportunity to observe and “experience” the physiological concepts being addressed every week. So, your opportunity to learn and understand human physiology will be enhanced by your attention and active participation in the lab experience. You will see in this course how the knowledge of human anatomy you have built, is applied to an understanding of human body functions and how the various organ systems interact with one another to maintain homeostasis… otherwise known as Human Physiology!

Lab Instructor Info:

Instructor: __________________________ Office: __________________________

Lab Meeting Day: __________________________ Meeting Time: __________ Lab Sect Code: __________

Office Hours: __________________________

Office Phone: __________________________ E-Mail: __________________________

Required Supplies:


2. Weekly lab protocols and related handouts, notes, etc. available through ASU Blackboard (http://blackboard.angelo.edu)

3. Access to Mastering A&P (MAP) available at http://www.masteringaandp.com/. Your textbook should come bundled with access, or you can purchase online access separately. We will use this online resource regularly to earn points for both lecture and lab. You must register for this through your lecture section. **Note that all MAP assignments (lecture and lab) will be available and managed through your lecture section.**

4. Software (including):

   **PhysioEx9.1:** Laboratory Simulations in Physiology Pearson Publishers, available online w/ password protected access at http://www.physioex.com/login.html. Or for easiest access **use the “My Study Area” link on “MAP” website after you have registered through the website.**

   **Interactive Physiology (IP 10):** Optional for lab, but highly recommended for your lecture section, accessible at http://www.interactivephysiology.com/login/index.html **Can also be accessed through “My Study Area” link on “MAP” after you have registered through the website.** Recommended activities are referenced in the lab schedule for each week.

5. An inexpensive calculator that does basic math functions. **Use of cell phone calculators will not be permitted during lab exams.**

**A successful student in Human Physiology should be able to achieve the following course and state core related learning outcomes:**

- locate, identify, and functionally describe the structures of the human body at all levels of organization (i.e. recall content) = CT1, EQS1, EQS2 – Assessment = In class activities, lecture exams, embedded test questions, lab practical exams, and lab activities/reports
- develop understanding of the functional relationships of anatomical structures to one another (at all levels of organization) in health and communicate the acquired knowledge in written form. (i.e. comprehend the material).

CS1 – Assessment = In class activities, lecture exams, embedded test questions, lab practical exams, and lab activities/reports

- perform laboratory investigations in which numerical physical and chemical physiological data pertaining to tissue function are collected, classified, and analyzed in order to reach an informed conclusive interpretation about relevant clinical scenarios and “real-world” applications. EQS1 – Assessment = In class activities, lecture exams, embedded test questions, lab practical exams, and lab activities/reports work effectively with others to support and accomplish a shared goal = CS1, TW2 – Assessment = In class activities, lecture exams, embedded test questions, lab practical exams, and lab activities/reports

- connect what she/he is learning to her/his own field (i.e. to make physiology relevant to your own academic endeavors). Assessment = In class activities, lecture exams, embedded test questions, lab practical exams, and lab activities/reports

For State, and Accreditation purposes this course will assess your ability to:
- CT1: Gather, analyze, evaluate, and synthesize information relevant to a question or issue
- CS1: Develop, interpret, and express ideas through effective written communication.
- EQS1: Manipulate and analyze numerical data and arrive at an informed conclusion.
- EQS2: Manipulate and analyze observable facts and arrive at an informed conclusion.
- TW2: Work effectively with others to support and accomplish a shared goal.

Laboratory Grade Determination:
Scores for each lab exam will be reported to your lecture instructor for use in calculating your final course average and assignment of a final composite letter grade in the course.

| Lab Exam 1       | 150 possible points |
| Lab Exam 2       | 150 possible points |
| Lab Exam 3       | 150 possible points |
| **Total**        | **450 total possible points of Final Composite Course Grade** |

Laboratory Agenda:

**The larger objectives and learning outcomes for labs are to be able to**

1. Analyze and interpret the data collected in order to make reasonable conclusions
2. Associate actual observed phenomena from lab to physiological processes.
3. Apply the concepts connected to the experiments to practical “real life” scenarios related to human homeostasis, health, and disease.

BEFORE you attend each week's lab session you will be expected to read and review specific pages in the textbook, lab exercise protocols and activity files provided on the ASU Blackboard Coursepage (Bb) under the "Lab Protocols". Additionally these “pre-laboratory preparation activities” may include completing assignments with PhysioEx 9.1.

Prior to attending each lab, students will be expected to:
1. Visit the ASU Blackboard System via the following links: directly [http://blackboard.angelo.edu](http://blackboard.angelo.edu) and locate and open, the course page provided for your lab section and instructor.
2. Download and print all handouts associated with the upcoming week’s lab, including Lab Protocol pages that you will use as your guide and instructions for each week’s lab work. It’s a good idea to read through these BEFORE you come to lab in order to be better prepared for the topics that will be addressed in the activities planned for your lab session each week. Reference reading for pages in the Silverthorn textbook, and PhysioEx assignments are often provided in these (and in your lab schedule) to assist in making necessary preparations for lab sessions.

Additional Optional Study Materials are also provided via the Lab Blackboard Coursepage for your use also. These are provided as items that you may use or not as you see fit – but have been requested by students in the past to offer additional study material, practice for lab exams and lecture quizzes etc.. These will never be assigned for grades nor collected for grading in any way. They are provided for your use as you wish. If you use them and have any questions after doing so please don’t hesitate to ask your instructor for additional assistance with any of them. These are all provided strictly to help you.

During the lab, lab group will perform experiments, collect data, make observations and record these. Discussion and collaboration within the group is encouraged so that the work accomplished is a direct reflection of the efforts of all members of the group. A major part of lab work extends beyond simply collecting experimental data. Lab exams are intended to offer a real ability to show what you have learned by using and applying the analytical methods and interpretive skills being learned in your lab work.
Each member of a lab group will be expected to do his/her fair share and contribute willingly to the completion of each day’s activities. IT IS RECOMMENDED THAT EACH STUDENT SHOULD RETAIN A COMPLETED COPY OF EACH ASSIGNMENT SINCE THESE WILL BE VALUABLE IN HELPING STUDENTS TO PREPARE FOR LAB EXAMS. (See this semester's lab schedule for exam dates)

Lab Exams:

Exam Format: \( \Rightarrow \) ALL QUESTIONS ARE OBJECTIVE FORMAT \( \Leftarrow \)

Each exam will employ a variety of objective testing methods. Expect to see multiple choice, matching, true/false, and “answer pool based” fill-in-the-blank questions. There are also multiple “practice questions” you may use embedded in each weekly lab protocol, and in PhysioEx exercise worksheets. Additionally, you will also be expected to interpret and analyze data similar to what you collected in lab. You will be expected to make mathematical calculations using the formulas you used in the lab exercises in the same manner as they were used during lab work. Additionally, you will be expected to analyze and interpret the data in a manner similar to that used in each lab session or in the PhysioEx lab simulations. Exam dates for your particular lab section are noted by week on the lab schedule.

Grade Review / Regrading Procedures:

An answer key of each exam will be available per your lab instructor for your review when your answer sheet is returned at your next lab session. Students are encouraged to confer with your instructor if there are any questions regarding exams once they have compared their exam to the key. Questions regarding scoring should be reported to your instructor immediately for consideration. You must follow the procedures for regrading that follow:

1. If the error is strictly an addition and/or division error:
   - attach a note to your exam which reads “math only” and highlight the error
   - turn in your exam to your instructor personally

2. If you believe you have found a grading error:
   - remember that the exam answer sheets must be unaltered since the time you submitted them at the exam. DO NOT MAKE ANY CHANGES ON THE ANSWER SHEET unless instructed to by your instructor. If there have been questionable erasures or markings which call into question the validity of the answers a regrade cannot be completed. NO EXCEPTIONS.
   - be sure you have studied the key before you request that any question(s) be regraded.
   - you must highlight the error and clearly state your reason(s) for thinking the question has been graded incorrectly in writing in an attached note.
   - “Question X is graded wrong or I deserve more points on question Y” are not reasons. A clearly delineated and thoughtful reason with verification from a published reference is expected, i.e. you must be able to show with a reference why your answer should be counted correct.
   - turn in your exam to YOUR lab instructor personally

3. Instructors will be happy to review and correct any errors you may suspect BUT ONLY if you follow the above instructions. Understand that this will be very fair, but, to be fair, a regrade of the entire exam will be done AND if the resulting grade is lower than the previous, the second grade will replace the first.

4. The deadline for requesting any regrading is 5pm one week following the posting or available return of your exam. NO EXCEPTIONS.

Attendance Policy:

Students are expected to attend their normally scheduled lab and to actively participate every week. Each lab instructor will monitor class attendance as required by the University. Each student will be required to attend lab prepared to begin on time. Although there is no formal category of grade dedicated to attendance, each lab instructor reserves the right to report observations related to attendance, effort and attitude, level of participation, and performance in lab, to each student’s lecture instructor along with the total of points earned on lab exam grades.

Most instructors will employ a sign-out sheet or utilize TopHat during each lab session. Students not present at the end of lab will be counted absent. Therefore, plan to be in the lab for the entire session. If you anticipate a need to leave lab early you should consider attending another lab session during the week instead, to reduce your risk of losing attendance credit and, of course, the instruction
You may not simply attend another lab without the consent of your instructor and the instructor of the session you plan to attend. If you miss a lab FOR ANY REASON, you must contact your lab instructor and arrangements to attend another lab may be made. When you contact your lab instructor they will ask you which lab you intend to attend later that week, so, you must consider your schedule and choose a time beforehand. A schedule of all lab sessions and instructors is posted on ASU Blackboard lab course pages. This permission must be communicated to the instructor of the lab where the absence will be made-up BEFORE you arrive, by YOUR instructor to gain permission to attend another lab. IT IS YOUR RESPONSIBILITY TO COMMUNICATE WITH YOUR LAB INSTRUCTOR REGARDING LAB MAKE UP. Failure to do this is likely to result in an inability to attend another lab during the week it is taught.

Religious Holy Day Observance Policy: A student who intends to observe a religious holy day, in addition to any traditionally observed by the university during the semester should make that intention known in writing to the instructor during the first week of the semester and one week prior to the absence. If this submission is completed, a student who is absent from classes for the observance of a religious holy day shall be allowed to take make up missed exams or assignments scheduled for that day in accordance with syllabus policy.

Academic Honesty / Plagiarism / Cheating:
Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding the Academic Honor Code, which is contained in both print and web versions of the Student Handbook. Students in this class are expected to submit work in accord with the guidelines of academic honesty provided by their instructor for each particular activity. Any student found to be submitting a completed assignment that is shown not to be their own as well as the student that allowed their work to be copied will not receive credit for this work. (This policy applies mainly to examination situations.) Furthermore, any student observed by the instructor to be willfully copying from another student during an exam or otherwise engaged in using devices not allowed by the instructor during an examination will not receive credit for the examination. The student who knowingly allows another student to do so will be subject to disciplinary action as well. In each case of suspected academic dishonesty the student(s) involved will also be subject to further disciplinary action by the university and dismissal from the course.

Handicapping Conditions / Learning Disabilities:
Persons with disabilities which may warrant academic accommodations must contact the ASU Student Life Office, Room 112 University Center, in order to request and to implement academic accommodations.

Cell phones, pagers, music players, laptops, tablets, etc.: Turn them off while a lab exam or lecture is in progress, or better still, don’t bring them with you to class on the day of an exam. If any of these devices “go–off” during class and especially during or exam you will be asked to leave and given a grade of zero for the or exam.NO EXCEPTIONS.

During usual lab sessions, i.e. not during exam sessions, if your device can be set to notify you inaudibly this is allowed, but any conversations or responses on your part must be carried out outside the classroom during any part of the class period. No Exceptions. If you would like to electronically record lectures check with your particular instructor(s). The right to allow or refuse this is reserved for each lab instructor individually and at their discretion. You must ask for permission. Most are willing as long as the method used does not distract you, the other students in class, or the instructor. If any of these devices “go–off” during class and especially during or exam you will be asked to leave and given a grade of zero for the or exam. NO EXCEPTIONS.

Withdrawal From the Course:
Contrary to what many students believe, you are not automatically withdrawn from a course if you cease to attend lectures or labs. If you wish to discontinue participation in a course you must formally withdraw from the course. Failure to do this can result in a grade of F appearing on your academic transcript. The last day that a student may withdraw from the course with a “W” is, Wednesday, November 3rd. Anyone remaining in the course after this date will receive the grade commensurate to the points they have earned. Withdrawal from lab includes withdrawal from the lecture portion of the course and vice versa, so you must discuss your intention to withdraw with your lecture instructor.
I, _____________________________________________, (print your name) have read the information contained in the Biology 2424 Human Physiology Lab course syllabus for the Fall 2017 Semester at Angelo State University and fully understand the expectations, requirements, and regulations for completing this course successfully. In addition, I pledge to maintain the highest standards of academic honesty, integrity, and discipline while I am enrolled in this course.

LECTURE section (Instructor name, day & time) (required): ________________________________.

LAB section (day & time) (required): ________________________________.

Academic major (required): ________________________________.

Classification (required): ________________________________.

ASU ID# ________________________________.

Hometown ________________________________.

ASU Email and other addresses you check regularly (required):
______________________________________________________.

Phone # (optional) ________________________________. In some rare cases I have found it necessary to contact a student.

I acknowledge that I understand and am responsible for the material contained in the syllabus.

SIGNATURE: ________________________________________________.

TODAY’S DATE: ________________________.
# Bio 2424 - Human Physiology Lab Schedule -- Fall 2017

<table>
<thead>
<tr>
<th>Week of</th>
<th>Lab #</th>
<th>Lab Activities &amp; Assignments</th>
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<tbody>
<tr>
<td>August 28th</td>
<td>1</td>
<td>Introduction, Orientation, Syllabus and Class Resources</td>
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<tr>
<td></td>
<td></td>
<td>Fundamental Physiological Principles</td>
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<td></td>
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<td>Mathematical Conversions and Applications</td>
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<td>September 4th</td>
<td>2</td>
<td>Cell Physiology and Movement Through Cell Membranes</td>
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<td>PhysioEx Exercise # 1</td>
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<td></td>
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<td>IP Module: Fluid and Electrolytes - Introduction to Body Fluids</td>
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<td>**</td>
<td>MONDAY LAB STUDENTS ARE EXPECTED TO ATTEND ANOTHER LAB (Tu, W or Th) THIS WEEK</td>
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<tr>
<td>September 11th</td>
<td>3</td>
<td>Glucose Tolerance Testing and Metabolic Applications</td>
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<td>PhysioEx Exercise # 4</td>
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<td></td>
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<td>IP Modules: Endocrine System Modules – Mechanism of Hormone Action, The Actions of Hormones</td>
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<td></td>
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<td>on Target Cells: 1) Direct Gene Activation 2) Second Messenger Activation, The Hypothalamic-Pituitary Axis, Response to Stress</td>
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<td>September 18th</td>
<td>4</td>
<td>Mechanical vs. Chemical Digestion</td>
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<td></td>
<td>Selected Examples of Enzymatic Digestion</td>
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<td>PhysioEx Exercise # 8</td>
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<td>IP Modules: Digestive System Modules - Control of the Digestive System, Digestive Secretion, Enzymatic Digestion and Absorption</td>
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<tr>
<td>September 25th</td>
<td>5</td>
<td>LAB EXAM 1 - Covers Labs 1-4</td>
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<tr>
<td>October 2nd</td>
<td>6</td>
<td>Basic Neuroanatomy Review and Fundamentals of Neurophysiology</td>
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<td>Human Reflex Arc Considerations, Functions, and Reaction Time Assessments</td>
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<td>PhysioEx Exercise # 3</td>
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<td>Sensory Physiology I: Cutaneous, Auditory</td>
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<td>IP Modules: Nervous System I - Resting Membrane Potential, Generation of an Action Potential,</td>
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<td>Propagation and Velocity of the Action Potential</td>
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<td>Nervous System II – Events at the Synapse</td>
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<td>October 9th</td>
<td>7</td>
<td>Sensory Physiology II: Vision Considerations and Vestibular Labyrinthine Reflexes</td>
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<td>Review and Refer to PhysiologyPlace.com A&amp;P Flix, PhysioEx &amp; IP Modules from Week 6</td>
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<td>October 16th</td>
<td>8</td>
<td>Muscle Contractility Exercises: Simulations and Analysis</td>
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<td>PhysioEx Exercise #2</td>
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<td>IP Modules: Events at the Neuromuscular Junction, The Cross Bridge Cycle, Muscle Metabolism</td>
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<tr>
<td>October 23rd</td>
<td>9</td>
<td>LAB EXAM 2 - Covers Labs 6-8</td>
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<tr>
<td>October 30th</td>
<td>10</td>
<td>Cardiovascular Physiology I:</td>
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<td>PhysioEx Exercise # 6</td>
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<td>IP Modules: Pathway of Blood through the Heart, IP2: Electrical Activity of the Heart, IP2: Cardiac Cycle, IP2: Cardiac Output, Action Potentials in Autohythmic Cells, Intrinsic Conduction, System of the Heart, Cardiac Cycle, Regulation of Cardiac Output</td>
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<tr>
<td>November 6th</td>
<td>11</td>
<td>Cardiovascular Physiology II:</td>
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<td></td>
<td></td>
<td>Human Cardiovascular Dynamics and Electrocardiography</td>
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<td>PhysioEx Exercise # 5</td>
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</table>
November 13th 12  Respiratory Function Tests and Volume Determinations  
Selected Exercise Physiology Applications (Vernier)  
PhysioEx Exercise # 7  
**IP Modules:** IP Animation: Pulmonary Ventilation, IP Animation: Control of Respiration  
IP Animation: Gas Exchange

November 20th 13  *Thanksgiving Holiday (W, Th, F) Labs Will Not Meet This Week*

November 27th 14  Renal Function Tests and Urinalysis  
PhysioEx Exercise # 9, 10  
**IP Modules:** Urinary System- IP Animation: Introduction to Body Fluids, IP Animation:  
Glomerular Filtration, IP Animation: Processing of Salt and Water in the Nephron,  
IP Animation: Reabsorption and Secretion in the Proximal Tubule, IP Animation:  
Mechanisms to Control Acid-Base Homeostasis, IP Animation: Acid-Base Problems

**December 4th 15  LAB EXAM 3- Covers Labs 10-14**

December 11th 16  Lecture Final Exams This Week

For more information consult the Bio 2424 Human Physiology  
Course Syllabus and the  
ASU Human Physiology Blackboard (Bb) Coursepages