**BIOL2211-02**

# Human Physiology Lab

**Spring 2021**

**Lecture**: T&Th 4:30pm – 5:45pm in OC; **Lab**: Th 6:00-8:00pm in Spencer 229
**INSTRUCTOR:** Dr Adam Gunn, PT, DPT
**OFFICE:** Lecture 247
**OFFICE HOURS:** Available as needed via email or pre-arranged on campus meeting
**EMAIL:** agunn@uarichmountain.edu

**PREREQUISITES for this course are successful completion Human Anatomy course or instructor permission.**

**RESOURCES:**
**Laboratory Manual**: *Laboratory Manual for Hole's Human Anatomy and Physiology* 14th (Cat Version); Martin. Package ISBN: 978 125 9681240
**Optional**-** *Netter's Anatomy Coloring Book Updated Edition (Netter Basic Science)* 2nd Edition ISBN-10: 0323545033
**Course CONNECT:** https://connect.mheducation.com/class/a-gunn-2020-2021

**COREQUISITES:** Enrollment in Human Physiology BIO-2213 is also required

**COURSE DESCRIPTION:** The lab course will use a "hands on" approach, with an emphasis on integrated structure-function relationships at the tissue, organ, organ system, and organismal level. The laboratory materials will include a microscope slide library of human/animal tissues, animal tissue for dissection, palpation, auscultation, drawings, skeletons, clinical tests, models, and video film clips of human cadaver dissections. This course provides the foundation for the lab/clinical topics covered by requiring identification using anatomical nomenclature, proper laboratory/microscopy techniques, and problem-solving skills for the following systems: endocrine, cardiovascular, lymphatic, immune, digestive, respiratory, urinary, reproductive systems, including fluid and electrolyte balance; and acid-base balance. Lecture is an integral co-requisite for this course and participation is required for successful completion of this course. This course is a co-requisite for Human Physiology lecture

**Face Mask Policy:** As per the Executive Order from the governor of Arkansas, all students are required to wear a proper face covering that completely covers the nose and mouth while on campus and in class. Masks with holes or masks that do not completely cover nose and mouth are not acceptable. Any student that does not have a proper mask will leave class and be referred to the Vice Chancellor for Student Affairs for possible disciplinary action.

**Food and Drink:** Food and drinks, including water are not allowed in the laboratory at any time.

**Program outcome and rationale:** The knowledge and critical thinking skills acquired in the general education component enable students to analyze problems, arrive at intelligent conclusions, and make reasoned choices in their professional and personal lives. This course provides a basic, yet comprehensive, knowledge of the human body for any and all medical purposes: to familiarize students with the organization of the human body, to develop an understanding of the functions of the organ systems including pathologies (diseases) that affect these systems.

**COURSE OBJECTIVES:** Upon completion of this course, the student will be able to:

1. Be able to effectively utilize anatomic terminology including use of appropriate relative anatomical terms as it relates to regions, directions, body planes, and cavities of the body.
2. Understand specific examples of homeostasis and how it is controlled in the human body.
3. Understand basic physiology and pertinent anatomy for the following human body systems: skeletal, integumentary, muscular, and nervous.
4. Be able to use microscopes, lab equipment, and computer technology to research information on human physiology.
5. Competently use clinical and laboratory equipment such as a stethoscopes, pulse oximeter, incentive spirometer, and syphgmomanometer.
6. Proficiently take vital signs and apply your knowledge of human physiology using applicable clinical tests/skills demonstrated
7. Analyze and interpret the basics of EKG/ECG strips and understand information related to physiological pathologies
8. Clinically apply an understanding of human physiology to realistic scenarios, case problems, and/or pathologic illnesses altering normal physiology.
9. Attain a basic understanding of the structures and relationships of the human body, and be able to use this information in a medical career or other biological discipline.

## TENTATIVE LAB SCHEDULE

| Date | Topic | Exercise |
|---|---|---|
| **Jan. 12** | **Endocrine System** | **(handout provided)** |
| **Jan. 19** | **Blood Cells and Blood Typing** | **37** |
| **Jan. 26** | **Heart Structure** | **38** |
| | **Cardiac Cycle** | **39** |
| **Feb. 2** | **EKG/ECG analysis** | **(handout provided)** |
| | **Auscultation of cardiovascular system** | |
| **Feb. 19** | **Vital signs** | **(handout provided)** |
| | **Clinical assessment: palpation, tests, and measures** | |
| **Feb. 16** | **Respiratory Organs** | **45** |
| | **Breathing and Respiratory Volumes and Capacities** | **46** |
| **Feb. 23** | **Respiratory ventilation** | **(handout provided)** |
| | **Spirometry** | |
| | **Auscultation of pulmonary system** | |
| **March 2** | **Lymphatic & Immune System** | **(handout provided)** |
| **March 9** | **Lab Practical EXAM** | **37-42** |
| **March 16** | **Digestive Organs** | **43** |

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|---|---|---|
| **March 23** | ****Spring Break** | |
| **March 30** | **Urinary Organs**<br>**Urinalysis** | **48**<br>**49** |
| **April 6** | **Lab Practical EXAM** | **43-49** |
| **April 13** | **Cat Dissection:**<br>**Cardiovascular, Respiratory, and Urinary** | **55, 56, 57, 58** |
| **April 20** | **Group(s) 1-4 clinical case presentation** | |
| **April 27** | **Group(s) 5-8 clinical case presentation** | |

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**LABORATORY CONDUCT:** To prevent the spread of pathogens, a ***clean technique*** will be used while handling all models/specimens/palpations in the lab. The laboratory consists of a series of hands-on exercises that are designed to reinforce some of the principles learned in class. Lab exercises are assigned beforehand and it is expected that you read the material BEFORE coming to class. You are expected to study and review models, materials, and organisms provided in lab as well as the A&P Revealed application in CONNECT. **Inappropriate comments and/or behavior during labs will not be tolerated!**

**ONLINE LABORATORY STUDENTS: Lab assignments and practical exams will be conducted online through Connect modules/exams, and/or through completed written lab manual assignments. Cat Dissection and Case Presentation points will be made up through provided online case studies and exams through Connect. NOTE: IN THE EVENT OF CAMPUS CLOSURE, ALL LABORATORY ASSIGNMENTS AND EXAMS WILL BE ONLINE THROUGH CONNECT**

**UARM CREDIT HOUR CALCULATOR:** For every course credit hour, you should expect to spend at least three clock hours per week of concentrated attention on course-related work, including but not limited to time attending class, as well as out-of-class time spent reading, reviewing, organizing notes, preparing for upcoming quizzes/exams, problem solving, developing and completing homework, and other activities that enhance learning. For a three hour course, a typical student should expect to spend at least nine hours per week dedicated to the course. This includes the time spent in class.

**COURSE REQUIREMENTS:** Students are required to ***READ*** the material in the laboratory manual and ***take notes*** over the lectured information and handouts. It is advisable to read at least 5 pages in the assigned chapter daily). If you wait until the day before the test to read the chapter, study the notes, and learn the vocabulary, you will not do well on the practical exams

**LABORAORY COURSE EVALUATION:** Student performance in the course will be based on the following factors:

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|---|---|---|---|
| Quizzes: | 5-10 @ 10 points each | = | 50-100 points |
| Dissections | 1 @ 50 points each | = | 50 points |
| Clinical case presentation | 1@ 100 points | = | 100 points |
| Lab Practical Exams | 2 @ 50 points | = | 100 points |
| **TOTAL POINTS POSSIBLE** | | **=** | **350-400 points **** |

**GRADING SCALE:**

A = 100 - 90%
B = 89 - 80%
C = 79 - 70%
D = 69 - 60%
F = 59% or lower

**LAB QUIZZES** – Approximately 5-10 quizzes will be given throughout the semester during lecture and/or laboratory periods. The quizzes will consist of questions related to laboratory exercises performed, assigned readings, and related lecture information.

**CLINICAL CASE PRESENTATIONS –** Laboratory groups of (3-4 people) from each table will receive a clinical case with a medical diagnosis relevant to systems discussed in A&P II (ex. Grave's disease, Diabetes, Heart Failure, COPD, chronic kidney disease, etc). Each group will answer questions given with their respective case and present these findings during lab using a PowerPoint presentation. **Following each presentation, a discussion panel will occur with questions asked by peers and the instructor. Grading will be based on overall presentation and participation. A separate rubric will be given along with each clinical case.**

**LAB PRACTICAL EXAM –** Laboratory Practical's are in-class examinations, in which students are given equipment, materials, and samples from previous laboratory exercises and asked to individually answer questions about them.

**ATTENDANCE REQUIREMENTS:** As a student, you are responsible for all material presented during lecture, whether present for the class or not. Assignments are to be completed in a timely fashion; therefore all make-up work must be completed within 5 calendar days of your return following an absence. Unexcused absences are not to exceed twice what the class meets in a week. Laboratory is a required part of this course and failure to attend or participate **will** result in an "F" for this course. For further information, see "Student Attendance" on page 70 of the 2017/2018 UARM Academic Catalog.

> **Make-up Policy:** A student who misses an assignment because of an officially sanctioned college activity or those with a documented excuse for their absence, will be permitted to make up the assignment or test without penalty. Any deviation from this policy will be considered on a case-by-case basis.

**Academic Dishonesty:** Instances of academic dishonesty, *i.e., "cheating,"* will be dealt with in accordance with those policies outlined in the current UARM Student Handbook.

**Cellphone usage policy:** Use of personal cell phones in class is prohibited **unless it is an emergency.** Failure to abide by policy results in a *verbal warning* upon first offense, and *10 point deduction* in grade with each additional offense after a verbal warning has been given. **Please make sure that your cell phone and any other electronic devices are turned off (or to silent mode) during the class session**.

**Additional Information:** Food and drinks are not permitted in this class.

**Disability Policy:** It is the policy of UARM to accommodate students with disabilities, pursuant to state and federal law. Any student with a disability who needs accommodations should contact the Vice President for Student Affairs Office, 394-7622 ext.1400.

**Arkansas Clean Air Act:** In compliance with the Arkansas Clean Air Act, UARM is a smoke and tobacco free facility. Students and guests are to refrain from the use of all tobacco products while on campus.

**Student Misconduct:** Students committing misconduct are subject to disciplinary sanction(s) and or restrictions. Misconduct or prohibited behavior includes, but is not limited to endangerment, harassment, disruption, sexual misconduct, dishonesty, illegal drugs and/or alcohol, fire or safety issues, gambling, property violations, computer violations or other violations as listed in detail in the UARM catalog.

**UARM Mission:** The University of Arkansas Rich Mountain provides transformative education to all learners

**Campus Security:** UA Rich Mountain strives to provide a safe learning environment; therefore, students who know of any security risk are asked to contact a college official. For more information follow this link and look under the title Health and Safety: http://www.uarichmountain.edu/at-a-glance/disclosures