**BIO 2441L-01**
# HUMAN ANATOMY LAB
**FALL 2020**

**Lecture**: T 8:00- 9:20pm OC, & F 8:00-9:20 Spencer 229/235; **Lab**: F 9:30-11:30pm Spencer 229/235
**INSTRUCTOR:** Dr. Adam Gunn, PT, DPT
**OFFICE:** OC/229/235
**OFFICE HOURS:** Available as needed via email or pre-arranged on campus meeting
**EMAIL:** agunn@uarichmountain.edu

**RESOURCES:**
**Lecture Text**: *Hole's Human Anatomy and Physiology* 14th ed; Shier, Butler, Lewis.
**Laboratory Manual**: *Laboratory Manual for Hole's Human Anatomy and Physiology* 14th (Cat Version); Martin. Package ISBN: 978 125 9681240
**Optional Lecture/Laboratory:** Atlas of Human Anatomy (Netter Basic Science) 7th Edition, ISBN 13: 978-0323393225, ISBN-10: 0323393225
**Course CONNECT:** https://connect.mheducation.com/class/a-gunn-2020-2021

**COREQUISITES:** Enrollment in Human Anatomy BIO-2443 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, drawings, skeletons, 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: integumentary, musculoskeletal, nervous, and cell structure and metabolism of tissues in those organ systems. Lecture is an integral co-requisite for this course and participation is required for successful completion of this course. This course is a prerequisite for Human Physiology Lab

**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 homeostasis and how it is controlled in the human body.
3. Understand the basic concept of chemistry, such as atomic and molecular structure, and biologically important molecules.
4. Understand the structure and function of a basic animal cell
5. Understand the fundamentals of DNA replication, protein synthesis, and cellular respiration.
6. Understand the different types of tissues and their significance within the human body.
7. Understand basic anatomy for the following human body systems: skeletal, integumentary, muscular, and nervous.
8. Be able to use microscopes, lab equipment, and computer technology to research information on human anatomy and relevant 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 |
|---|---|---|
| **Aug. 28** | **Care and Use of the Microscope** | **4** |
| | **Body Organization and Terminology** | **2** |
| **Sept. 4** | **Cell Structure and Function** | **5** |
| | **Movements through Membranes** | **6C** |
| | **Cell Cycle** | **7** |
| **Sept. 11** | **Epithelial Tissues** | **8** |
| | **Connective Tissues** | **9** |
| | **Muscle and Nervous Tissues** | **10** |
| **Sept. 18** | **Integumentary System (Models)** | **11** |
| **Sept. 25** | **Lab Practical EXAM** | **2, 4, 5, 6, 7, 8, 9, 10, 11** |
| **Oct. 2** | **Bone Structure and Classification (Models)** | **12** |
| | **Organization of the Skeleton (Models)** | **13** |
| **Oct. 9** | **Skull (Models)** | **14** |
| | **Vertebral Column and Thoracic Cage (Models and Palpation)** | **15** |
| **Oct. 16** | **Pectoral Girdle and Upper Limb (Models/Palpation/Drawing)** | **16** |
| | **Pelvic Girdle and Lower Limb (Models/Palpation/Drawing)** | **17** |
| **Oct. 23** | **Joint Structure and Movement (Models and Demonstration)** | **18** |
| | **Skeletal Muscle Structure (Models)** | **19** |
| **Oct. 30** | **Surface Anatomy (Palpation and Drawings)** | **24** |
| | **TO BE COMPLETED AND TURNED IN <u>BEFORE LAB:</u>** | |
| | **-Muscles of the Face, Head, and Neck** | **20** |
| | **-Muscles of the Chest, Shoulder, & Upper Limb** | **21** |

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|---|---|---|
| | **-Muscles of the Hip and Lower Limb** | **23** |
| **Nov. 6** | **Lab Practical EXAM** | **12-21, 23, 24** |
| **Nov. 13** | **Cat Dissection: Musculature (bones and skin)** | **54** |
| **Nov. 20** | **Nervous Tissue and Nerves (Models and Instruments)** | **25** |
| | **Spinal Cord and Meninges** | **26** |
| | **Reflex Arc and Reflexes** | **27** |
| | **Brain and Cranial Nerves** | **28** |
| | **AND/OR** | |
| | **Dissection of the Sheep Brain** | **29** |

**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. **Laboratory attire must be worn during all labs where *palpation*** or ***drawings*** are noted. Lab attire includes sports bras, tank tops, and/or knee length shorts*. **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. 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 lectures. 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 points each | = | 50 points |
| Dissections | 2 @ 50 points each | = | 100 points |
| Lab Research assignment | 1 @ 100 points | = | 100 points |
| Lab Practical Exams | 2 @ 50 points | = | 100 points |
| **TOTAL POINTS POSSIBLE** | | **=** | **350 points **** |

**GRADING SCALE:**

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

**LECTURE/LAB QUIZZES** – Approximately 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.

**RESEARCH ASSIGNMENT** – Go to https://www.ncbi.nlm.nih.gov/pubmed/ and search a primary research article, from a topic of your interest, which pertains to allied human health. Thoroughly analyze the article and write a single page reflection (12 point font, double spaced). Discuss important findings of the study including things that were/were not difficult to understand. A grading rubric will be provided separately. Due date TBA.

**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. Others may also make up missed exams, but will be penalized 20% for each occurrence. 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.

**Additional Information:** Food and drinks are not permitted in this class. **Please make sure that your cell phone and any other electronic devices are turned off (or to silent mode) during the class session**.

**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:** University of Arkansas Rich Mountain exists to provide all residents of the Ouachita Mountain Region with exemplary educational and enrichment opportunities to improve the quality of life and standard of living.

**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