BIO 2441L-02
HUMAN ANATOMY LAB
FALL 2023

Lecture: T & Th 4:30- 5:45pm LH227 **Lab**: T 6-8 pm Spencer 229/235
INSTRUCTOR: Daryan Torix, DPT & Fran Nault
OFFICE: OC/229/235
OFFICE HOURS: Available as needed via email or pre-arranged on campus meeting
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RESOURCES:
Lecture Text: *Hole's Human Anatomy and Physiology* 16th ed; Shier, Butler, Lewis.
Laboratory Manual: *Laboratory Manual for Hole's Human Anatomy and Physiology* 16th (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

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

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. 22	**Care and Use of the Microscope**	**4**
	Body Organization and Terminology	**2**
Aug. 29	**Cell Structure and Function**	**5**
	Osmosis/Movement through membranes	
	Cell Cycle	**7**
Sept. 5	**Epithelial Tissues**	**8**
	Connective Tissues	**9**
	Muscle and Nervous Tissues	**10**
Sept. 12	**Integumentary System (Models)**	**11**
Sept. 19	**Bone Structure and Classification (Models)**	**12**
	Organization of the Skeleton (Models)	**13**
Sept. 26	**Lab Practical EXAM**	**2, 4, 5, 7, 8, 9, 10, 11**
Oct. 3	**Axial skeleton**	**(Handout given in lab)**
Oct. 10	**Appendicular skeleton**	**(Handout given in lab)**
Oct. 17	**Joint Structure and Movement (Models and Demonstration)**	**18**
	Skeletal Muscle Structure (Models)	**19**
Oct. 24	**Muscle lab (Handout given during lab)**	
	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**
	-Muscles of the Hip and Lower Limb	**23**
Oct. 31	**Lab Practical EXAM**	**12-21, 23, 24**
Nov. 7	**Fetal pig dissection: Musculature (bones and skin)**	**54**
Nov. 14	**Dissection of the Sheep Brain**	**29**
Nov. 28	**Nervous Tissue and Nerves (Models and Instruments)**	**25**

Spinal Cord and Meninges	**26**
Reflex Arc and Reflexes	**27**
Brain and Cranial Nerves	**28**

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 through Blackboard. **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 McGraw-Hill Connect for modules/exams, and/or through completed written lab assignments.

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:

Quizzes:	10-12 @ 10 points each	=	100-120 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		**=**	**400-420 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. **(Online students will have exams given through Blackboard that includes both question and essay formats)**

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.

Additional Information: 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.

Title IX and Discrimination Policy: UA Rich Mountain adheres to a policy that enables all individuals regardless of race, color, gender, national origin, age, religion, sexual orientation, veteran's status, or disability, to work and study in an environment unfettered by discriminatory behavior or acts. Harassment of an individual or group will not be condoned, and any person (student, faculty, of staff member) who violates this policy will be subject to disciplinary action.

Harassment that is considered discriminatory includes actions or conduct (verbal, graphic, gestural, or written) directed against any person or group with the intent to demean or create a hostile or threatening environment. It is not the intent of this policy to infringe upon or limit educational,

scholarly, or artistic expression. Any person who believes he or she has been discriminated against should contact the Title IX Coordinator to obtain assistance and information concerning the filing of a complaint.

Face mask policy: Students are encouraged but not required to wear face masks in class and public spaces.

Attendance Policy: For attendance purposes, a student who is displaying symptoms of illness must email: contact.tracing@uarichmountain.edu to determine next steps for an excused absence related to COVID or flu. Contacting an instructor **DOES NOT** start this process or guarantee an excused absence.

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 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