

ADVANCED HUMAN ANATOMY & PHYSIOLOGY LABORATORY

BIOL 253L

Lab instructors: Jade Blackwell blackwelljade@unc.edu
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Lab director: Corey Johnson johnsonc@bio.unc.edu

Meeting pattern: All labs meet in Wilson 112
Monday, 8:00am - 10:00am (Blackwell, section 403)
Monday, 10:15am - 12:15am (Amatuli, section 406)
Tuesday, 8:00am - 10:00am (Blackwell, section 401)
Tuesday, 10:15am - 12:15am (Blackwell, section 404)
Wednesday, 8:00am - 10:00am (Amatuli, section 402)
Wednesday, 10:15am - 12:15am (Amatuli, section 405)

Requirements: Advanced A&P (BIOL 253) is the co-requisite

Spring 2020 Lab Information: This laboratory course is intended to provide the student with the opportunity to observe many of the physiological principles that are essential to human function. It will help students develop physiology-related skills and techniques used in clinical settings, improve student's problem solving skills, and enhance their ability to work both independently as well as working as a part of a group.

Instruction will involve inquiry-based laboratory activities as well as traditional direct instruction. Students will generate their own hypotheses, collect data from fellow students, analyze, interpret and present their findings. Topics of instruction include electromyography, electrocardiography, and spirometry analysis.

Week of...	Lab Topic
Jan 13	Intro & Muscle fatigue/Skeletal muscle EMG
Jan 20	NO LAB
Jan 27	Blood pressure
Feb 3	ECG and Peripheral Circulation
Feb 10	Students collect data on group project
Feb 17	Students present projects
Feb 24	Midterm exam
Mar 2	Breathing/lung volumes I & II
Mar 9	Spring break
Mar 16	Cardiorespiratory effects of exercise
Mar 23	Students collect data on group project
Mar 30	Students present projects
Apr 6	Case study
Apr 13	Lab final exam

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Required materials: We will be using a web-based software package called *Lt*, by AD Instruments. *Lt* will allow you to record data in the laboratory and analyze data in or out of the lab. The cost is approximately \$40 and a link for the 1 year subscription will be provided prior to the start of lab. All pre-laboratory reading will be provided through this platform, so there will be no additional text to purchase. Students will be expected to bring a laptop to lab in order to complete their data collection.

Grading: A lab report will be assigned for each lab period. Students will be required to write a clear and concise report. In addition, 2 group presentations will be required and 1 final exam will be given. Grades will be determined on following basis:

Pre-lab assignments = 15%
Lab/Post-lab reports, case study = 30%
Presentations = 20%
Mid-term lab exam = 15%
Cumulative exam = 20%

Lab reports: 20% of your lab report grade will come from completion of the lab activity in group (only one submission per group). Lab reports will be collected at the beginning of the following lab each week. If we do not meet the week following the activity, I will collect them the next time we do meet. Each student must submit their own lab report and may not collaborate with other students.

Lab reports should be concise (maximum of 8 pages) written in informal scientific format.
Introduction: background information and the purpose of the experiments conducted

Materials and methods: explain the way experiments were performed and materials used

Results: present results and any accompanying figures

Discussion: conclusions based on the data. Answer any questions provided.

Presentations: With your lab group (up to 4 people), you will explore a question of your choosing using any of the methods already performed in the previous weeks. On the week of student presentations, groups should prepare a 20-minute presentation outlining and justifying hypothesis, methods used, results gathered, analysis performed, conclusion and difficulties or errors encountered. All members of the groups should participate in the research and presentation and group names along with a reference list should be turned in to TA after the in-class presentation.

Equipment: None of the equipment used in lab may be removed from the classroom. At the end of lab, before any member of the group leaves, TA will check to make sure all components are present. Students will be held responsible for missing equipment.

Grading scale: The percentage of points earned will be applied to the scale below.

		93.0-100	A	90.0-92.9	A-
87.0-89.9	B+	83.0-86.9	B	80.0-82.9	B-
77.0-79.9	C+	73.0-76.9	C	70.0-72.9	C-
67.0-69.9	D+	60.0-66.9	D		
		<60	F		

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Attendance Policy: If you know you will be missing a lab or exam, notify your lab TA as soon as possible with a request to attend a different lab section. If that is not possible, all students will be given an opportunity to make up a missed lab at the end of the semester. If an exam is missed students will be given either an oral examination or allowed a makeup exam at the discretion of the instructor.

Honor code: Students are expected to abide by the UNC honor code at all times. Your participation in all activities and assignments implies compliance to the letter and intent of the honor code.

General Education curriculum - Empirical Investigation Lab: In this lab students will participate in measurement, data collection and analysis, and hypothesis testing connected to human physiology. Students will:

- Take empirical measurements using appropriate apparatus.
- Generate and test hypotheses.
- Gather, store, and organize data.
- Analyze and report on data and hypothesis testing.