

GRAYSON COLLEGE

Course Syllabus

Course Information

BIOL 2101

Human Anatomy & Physiology Laboratory I

Sections: A05, A06, A12

Spring 2017

Face-to-Face course, Lab meets 3 hours/week, Testing conducted on campus in the lab

or

Online course, All major exams and lab practicals must be taken at a proctored testing center.

Professor Contact Information

Professor name: Ryan Myers

Office phone: 903-415-2584

Email: myersr@grayson.edu

Office location: S205C

Office hours: M-Th 7-8a & M-Th 12:15-1:15p; F 9a-12p

Science Department Phone: 903-463-8797

Course Pre-requisites, Co-requisites, and/or Other Restrictions

Although students must register for a separate course number for lab and lecture, the two components are in fact part of the same course and are separated for scheduling and reporting reasons. Final grades are derived from the combination of both lecture and laboratory grades (60%/40% respectively). Together the lecture and laboratory components satisfy the state learning objectives (CS1, CT2, CT3, EQS2, and TW1) and therefore must be taken concurrently.

Prerequisite: College Readiness in reading required. Students must have passed the reading portion of the THEA (score of at least 230)

Concurrent enrollment in BIOL 2301 is required.

Prior completion of General Biology I (BIOL1306/1106), or Survey A&P (BIOL2404) is strongly recommended.

Course Description

BIOL 2101. Anatomy and Physiology Laboratory I. (0-3-1).

The lab provides a hands-on learning experience for exploration of human system components and basic physiology. Systems to be studied include integumentary, skeletal, muscular, nervous, and special senses.

State Core Objectives Met in this Combined Lecture and Lab Course:

1. Communication Skills, CS1 – Students will develop, interpret, and express ideas through written communication.
2. Critical Thinking Skills, CT2 – Gather and assess information relevant to a question.
3. Critical Thinking Skills, CT3 – Analyze, Evaluate, and Synthesize Information.
4. Empirical and Quantitative Skills, EQS2 – Students will describe, explain, and predict natural phenomena using the scientific method.
5. Teamwork, TW1 – Students will work cooperatively with their peers and leaders to more effectively solve problems by utilizing insights from multiple perspectives.

Student Learning Outcomes Met in this Combined Lecture and Lab Course:

1. Students will be able to locate and identify the various regions of the human body as well as the organs and their associated functions.
2. Students will be able to demonstrate an understanding of the integumentary, skeletal, muscular, and nervous systems and their interrelatedness.
3. Students will be able to identify the structures of the human cell and their related functions, including metabolism and cellular respiration.
4. Students will be able to demonstrate working knowledge of the chemical process of the human body as well as the physical properties that govern them.

State Learning Outcomes Met in this Combined Lecture and Lab Course:

Lab component

Upon successful completion of this course, students will:

1. Apply appropriate safety and ethical standards.
2. Locate and identify anatomical structures.
3. Appropriately utilize laboratory equipment, such as microscopes, dissection tools, general labware, physiology data acquisition systems, and virtual simulations.
4. Work collaboratively to perform experiments.
5. Demonstrate the steps involved in the scientific method.
6. Communicate results of scientific investigations, analyze data and formulate conclusions.
7. Use critical thinking and scientific problem-solving skills, including, but not limited to, inferring, integrating, synthesizing, and summarizing, to make decisions, recommendations and predictions.

Lecture component

Upon successful completion of this course, students will:

1. Use anatomical terminology to identify and describe locations of major organs of each system covered.
2. Explain interrelationships among molecular, cellular, tissue, and organ functions in each system.
3. Describe the interdependency and interactions of the systems.
4. Explain contributions of organs and systems to the maintenance of homeostasis.
5. Identify causes and effects of homeostatic imbalances.
6. Describe modern technology and tools used to study anatomy and physiology.

Course Competencies:

A student will be able to demonstrate hands-on skills with biological specimens including those that must be viewed with the compound light microscope. Dexterity with and understanding of medical and biological instrumentation will be achieved. Specific objectives are as outlined for each exercise (Exercises 2-35) within the lab manual.

Required Textbooks

Laboratory Manual to Accompany Hole's Human Anatomy and Physiology, 3rd edition, by Terry R. Martin, McGraw-Hill Publishers, ISBN 9781259298677

In case of inclement weather, emergency closings, or other unforeseen disruptions to scheduled classes, student must log onto their Canvas accounts for directions on where or how to continue their coursework.

Important Dates:

Martin Luther King Holiday (no class)	January 16 th , 2017
First day of classes:	January 17 th , 2017
Last day to add/change courses:	January 20 th , 2017
Spring Break	March 13 th – March 17 th , 2017
Professional Development (no class)	March 24 th , 2017
Last day to drop/withdraw from course:	April 18 th , 2017
Lab Final Exams:	May 8 th – May 11 th , 2017

LABORATORY COMPONENT

The following list of exercises will be done during the course. Specific objectives are enumerated in each exercise.

Laboratory Safety Handouts

Exercise 2	Body Organization, Membranes and Terminology
Exercise 4	Care and Use of the Microscope
Exercise 5	Cell Structure and Function

- Exercise 6 Movements Through Membranes
- Exercise 7 Cell Cycle
- Exercise B Enzymes (CS1, CT2, CT3, EQS2, TW1)
- Exercise 8 Epithelial Tissues
- Exercise 9 Connective Tissues
- Exercise 10 Muscle and Nervous Tissues

Lab Practical #1

- Exercise 11 Integumentary System
- Exercise 12 Bone Structure and Classification
- Exercise 13 Organization of the Skeleton
- Exercise 14 Skull
- Exercise 15 Vertebral Column and Thoracic Cage
- Exercise 16 Pectoral Girdle and Upper Limb
- Exercise 17 Pelvic Girdle and Lower Limb
- Exercise 19 Joint Structure & Movements
- Exercise 20 Skeletal Muscle Structure
- Exercise 22 Muscles of the Head and Neck
- Exercise 23 Muscles of the Chest, Shoulder, and Upper Limb
- Exercise 24 Muscles of the Vertebral Column, Abdominal Wall, and Pelvic Floor
- Exercise 25 Muscles of the Hip and Lower Limb

Lab Practical #2

- Exercise 27 Nervous Tissue and Nerves
- Exercise 28 Meninges, Spinal Cord, and Spinal Nerves
- Exercise 29 Reflex Arc and Reflexes
- Exercise 30 Brain and Cranial Nerves
- Exercise 32 Dissection of the Sheep Brain
- Exercise 33 General Senses
- Exercise 34 Smell and Taste
- Exercise 35 Eye Structure
- Exercise 36 Visual Tests and Demonstrations
- Exercise 37 Ear and Hearing
- Exercise 38 Ear and Equilibrium

Lab Practical #3

Comprehensive Lab Practical

SEQUENCE OF INSTRUCTION:

- Week 1 Lab Safety, Exercise 2
- Week 2 Fetal Pig Dissection, Exercise 4
- Week 3 Exercises 5, 6
- Week 4 Exercises 7, B (CS1, CT2, CT3, EQS2, TW1)
- Week 5 Exercises 8, 9, 10
- Week 6 Catch up and review for practical 1

Week 6	Lab Practical #1,
Week 7	Exercises 11, 12, 13
Week 8	Exercises 14, 15, 16, 17
Week 9	Exercises 19, 20, 22
Week 10	Exercises 23, 24, 25
Week 11	Catch up & review for practical 2
Week 11	Lab Practical #2
Week 12	Exercises 27, 28, 29
Week 13	Exercises 30, 32
Week 14	Exercises 33 - 38
Week 15	Catch up & review for practical 3
Week 15	Lab Practical #3
Week 16	Optional Comprehensive Lab Practical

Note: The sequence of instruction may be modified during the semester. Students will receive notification from the instructor of any changes

LECTURE COMPONENT – SEQUENCE OF INSTRUCTION

Chapter 1. Introduction to Human Anatomy and Physiology
 Chapter 2. Chemical Basis of Life
 Chapter 3. Cells
 Exam I

Chapter 4. Cellular Metabolism
 Chapter 5. Tissues
 Chapter 6. Integumentary System
 Exam II

Chapter 7. Skeletal System
 Chapter 8. Joints of the Skeletal System
 Chapter 9. Muscular System
 Exam III

Chapter 10. Nervous System I
 Chapter 11. Nervous System II
 Chapter 12. Nervous System III
 Exam IV

Optional Comprehensive exams

Note: The sequence of instruction may be modified during the semester. Students will receive notification from the instructor of any changes.

Schedule of Labs

Main Campus:

MW laboratories

8:00 am	Myers (myersr@grayson.edu)	S207
9:30 am	Hoffman (hoffmana@grayson.edu)	S207
11:00 am	Popplewell (popplewellr@grayson.edu)	S207
2:30 pm	Weart (weartb@grayson.edu)	S207
7:30 pm	Jones	S207

TR laboratories

9:30 am	Parsons (parsonsp@grayson.edu)	S207
11:00 am	Myers (myersr@grayson.edu)	S207
1:15 pm	Myers (myersr@grayson.edu)	S207
7:30	McLaughlin (mclaughlink@grayson.edu)	S207

South Campus:

MW laboratories

11:00 am	McLaughlin (mclaughlink@grayson.edu)	VN Nursing Lab
----------	-------------------------------------------------------------------------------------	----------------

Methods of Evaluation

Laboratory performance will be determined as follows:

Students will be given, at a minimum, weekly quizzes over the information taught during the previous week's labs. Students must stay for the entire lab to receive credit for the quiz. If a student must miss a lab, they are encouraged to attend another lab session. Students may take the other instructor's quiz. There will be NO quiz make-ups unless the corresponding laboratory class is made up as well. Students' lowest 2 quiz grades will be dropped.

In addition to the weekly quizzes, each student will be assessed over their use of the microscope. This performance assessment will count as one quiz grade. Students will be given a microscope slide and microscope and asked to find the specimen in the microscope slide within a reasonable time frame at an appropriate magnification, as determined by the professor.

Also in addition to weekly quizzes, each student will be responsible for writing a lab report. For sections that meet face-to-face, this lab report will describe the Enzymes experiment (exercise B, week 4). The report will be written in proper scientific format and will be evaluated for both substance and writing quality. The report will count as one quiz grade. **However, the lab report grade may NOT be dropped.**

There will be three lab practicals given at scheduled times throughout the semester. Each practical will consist of 50 questions (each worth 2 points) with an additional bonus of 4 points. The students will be timed at each station of the lab practical (2 questions per station). Partial

credit for answers will be awarded due to deductions such as ¼ point for incorrect spelling and ½ point for failure to designate right or left when identifying structures. The grade for each practical will constitute 25% of the final laboratory grade. Anyone missing a lab practical must take the Comprehensive Final Lab Practical at the scheduled time at the end of the semester. **For those who have taken all three practicals, the Comprehensive Final Lab Practical is optional.** It may be taken and substituted for a lower grade on one of the other three practicals. This will allow those who have taken all three practicals and the Comprehensive Final Practical to drop their lowest practical grade. Those who are satisfied with their grades do not have to take the Comprehensive Final Practical.

Laboratory performance will be calculated in the following manner:

The lowest 2 quiz grades will be dropped, and the average of the quiz grades will constitute 25% of the lab grade. Each lab practical constitutes 25% of the lab grade. At the end of the semester, the laboratory instructor will communicate students' laboratory grades to the students' lecture professor for calculation of the students' final A&P1 course grades.

Quiz and exam grades to be posted on Canvas

Grading

Anatomy and Physiology I is a composite course, composed of a Biology 2301 lecture section and a Biology 2101 laboratory section. 60% of the composite course grade will come from the student's performance in the lecture section. The remaining 40% of the composite course grade will come from the student's performance in the laboratory section. The student's final composite course grade will be calculated by their lecture professor at the end of the semester. **The resulting letter grade will be reported to the registrar as the final grade for both the laboratory and lecture sections.**

Composite grades will be rounded up or down. For example, an average of 89.5 will be rounded up to a 90 and 89.4 will be rounded down to an 89.

Letter grades will be assigned as follows:

100 - 89.5	= A
89.4 - 79.5	= B
79.4 - 69.5	= C
69.4 - 59.5	= D
Below 59.4	= F

Methods of Instruction

Students will work in groups to conduct experiments, collect data, draw logical conclusions and answer questions on biological principles presented in the lecture portion of this course. Students will dissect preserved specimens, work with models, and view prepared slides through

the microscope. The instructor will present information on exercises to be done weekly and will be present during the scheduled lab period for assistance and to answer questions.

Class Attendance

Academic success is closely associated with regular classroom attendance and course participation. All successful students, whether on campus or online, are expected to be highly self-motivated. All students are required to participate in courses regularly and are obliged to participate in class activities and complete and submit assignments following their professors' instructions.

Students taking courses during compressed semester time frames such as mini-mester, summer sessions, and mid-semester should plan to spend significantly more time per week on the course. Responsibility for work missed because of illness or school business is placed upon the student. More than two (2) absences are considered to be excessive. **In accordance with the College's Developmental Education Plan, students withdrawn from their only developmental course may be withdrawn from all academic courses.** In addition, students' eligibility to receive financial aid or live in a College dormitory can be affected by withdrawal from courses. When withdrawal occurs, any tuition refund would be made in accordance with state regulations.

Student Conduct & Discipline

Classroom Behavior

Students are expected to maintain classroom decorum that includes respect for other students and the instructor, prompt and regular attendance and an attitude that seeks to take full advantage of the educational opportunity.

Defacing College Property

Anyone caught defacing property in the lab will be responsible for cleaning, repairing or replacing the defaced property. The individual will also receive a zero (0) for the current lab assignment. Defacing property includes, but is not limited to, writing, marking or scratching on the tables, tabletops, chairs, cabinets, counter tops, shelving or walls.

Cell Phone Policy

All cell phones and other electronic devices must be turned off before entering the classroom. Text messaging is not permitted during class. If you have an emergency and need to take a call during class, you must inform the instructor before the beginning of class. Turn your ringer to vibrate, and when your call comes in, pick up all of your belongings and leave the classroom. You may return to class the next time the class meets.

Academic Integrity

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done

by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the college's policy on plagiarism (see GC Student Handbook for details). Grayson College subscribes to turnitin.com, which allows faculty to search the web and identify plagiarized material. Students are prohibited, too, from engaging in self-plagiarism. Self-plagiarism is the act of using work created for another course and submitting that work for credit in this course. This includes work submitted previously for one of this instructor's courses. There are limited circumstances under which the instructor will permit self-plagiarism, and special permission must be received in order to do so. Those who engage in acts of self-plagiarism (without the necessary permission) will be subject to the penalties listed in this syllabus for all other acts of plagiarism.

The policy of the Science Department: Any instance of a) plagiarism, b) collusion, c) cheating, or d) falsifying records, will result in a "0" for the assignment. The "0" assigned for cheating cannot be dropped or replaced by another grade when calculating the laboratory average.

Basic Rules for the Compound Microscope

1. Check the number on the microscope assigned to you with its corresponding place in the cabinet.
2. Grasp the microscope arm firmly with one hand, and lift the instrument carefully from the shelf. Hold it upright and close to your body when carrying it. Gently place it on the laboratory bench away from the edge of the bench.
3. Remove the dust cover, uncoil the power cord, and plug it into an appropriate outlet.
4. Examine the microscope to see if any damage is apparent or if the microscope was put away in an unacceptable condition, if so report this immediately to your instructor.
5. Clean all lenses by wiping several times with an acceptable lens paper. Do not use paper towels, Kleenex, clothing, or other types of material on lenses. Especially do not use Kimwipes!
6. Examine the stage to see if it is free of oil, that no slide has been left on the stage, and that the stage is racked all the way down into the lowest possible position. The scanning objective (or low power objective) should be in the path of light position. In other words, you want the objectives and the stage to be as far apart as possible.

7. Turn on the light to check if it is functional.
8. Follow your lab manual's and instructor's directions for using the microscope.
9. At the end of each lab session, turn off the light and check the stage to be sure no slide is on it and it is clean.
10. Clean all lenses with dry lens paper. If the oil immersion objective lens has been used, clean it last to avoid contaminating the other objectives with oil.
11. Rotate the nosepiece so that the scanning objective (low power objective) is in the light path.
12. Rack the stage down so that the objective and stage are as far apart as possible.
13. Unplug the power cord and rewind it. Replace the dust cover.
14. Carry the microscope as previously described back to the cabinet, returning it to its appropriate (numbered) place.

Biology Laboratory Safety Guidelines

1. Locate safety equipment: know where to find exit(s), fire extinguisher, and first aid kit. Know how to use the safety equipment.
2. **Do not eat or drink in the laboratory.**
3. Monitor risk: inform the instructor if you are pregnant, taking immunosuppressive medicines, or have any medical condition that might require special precautions in the lab, such as medications that would influence your response or reflex time. Under NO circumstances should you attend a lab session while "under the influence" of any chemical substance.
4. Avoid spills: place liquids toward the center of the bench, away from the edges.
5. Labels: read labels carefully before removing substances from containers. Properly label glassware before use.
6. Mouth pipetting is prohibited. Use mechanical pipetting devices.
7. Dissection: use care at all times when handling sharp dissection tools. Wear disposable gloves when dissecting preserved materials. Cover open cuts with a bandage before donning gloves. Do not touch face or eyes while wearing soiled gloves, and wash hands immediately after gloves are removed.
8. Discard used chemicals and materials into appropriately labeled containers, do not dispose of them down the sink unless specified by the instructor.

9. Broken glass: be careful handling broken glassware with bare hands. Dispose of all cracked or broken glassware in a puncture resistant container found in S 200 (chemistry lab), not the regular trash can.
10. Report any spills, accidents, strange occurrences, or other safety incidents to the instructor.
11. Professional conduct is expected to avoid creating dangerous situations. If you have any questions concerning the safety of a procedure, consult your instructor.
12. To find the MSDS on any product used by Grayson, please go to this link and search <https://msdsmanagement.msdsolnline.com/?ID=C9DFE03B-6CE5-4E53-AD11-CB6588BAE690>
13. Immediately report damaged equipment to your instructor.
14. Thoroughly wash hands with soap and water before leaving the laboratory.

Waiver of Liability

As a Science student in a Grayson College laboratory course, I hereby confirm that I have been advised of laboratory safety measures and rules and agree to comply with these rules at all times during my enrollment in this laboratory course. In addition, I agree to hold harmless GC in any event resulting from the laboratory environment.

I have carefully read and understand the implications of the Waiver of Liability.

Student Signature

Date

Contact Lenses

I am aware of the added health risks associated with wearing contact lenses in the lab, but have elected to do so against the advice of my instructor. (If unsigned, I have agreed not to wear contact lenses at any time during this course.)

Student Signature

Date

Grayson College is not responsible for illness/injury that occurs during the normal course of classroom/lab/clinical experiences.

These descriptions and timelines are subject to change at the discretion of the Professor.

Grayson College campus-wide student policies may be found in each Canvas course shell under the menu item “Student Services”.

Student Responsibility

You have already made the decision to go to college; now the follow-up decisions on whether to commit to doing the work could very well determine whether you end up working at a good paying job in a field you enjoy or working at minimum wage for the rest of your life. Education involves a partnership that requires both students and instructors to do their parts. By entering into this partnership, you have a responsibility to show up for class, do the assignments and reading, be engaged and pay attention in class, follow directions, and put your best effort into it. You will get out of your experience here exactly what you put into it – nothing more and nothing less.

TITLE IX

GC policy prohibits discrimination on the basis of age, ancestry, color, disability, gender identity, genetic information, national origin, race, religion, retaliation, serious medical condition, sex, sexual orientation, spousal affiliation and protected veterans status.

Furthermore, Title IX prohibits sex discrimination to include sexual misconduct: sexual violence (sexual assault, rape), sexual harassment and retaliation.

For more information on Title IX, please contact:

§ Dr. Regina Organ, Title IX Coordinator (903-463-8714)

§ Dr. Dava Washburn, Title IX Coordinator (903-463-8634)

§ Dr. Kim Williams, Title IX Deputy Coordinator- South Campus (903) 415-2506

§ Mr. Mike McBrayer, Title IX Deputy Coordinator (903) 463-8753

§ Website: <http://www.grayson.edu/campus-life/campus-police/title-ix-policies.html>

§ GC Police Department: (903) 463-8777- Main Campus) [\(903\) 415-2501](tel:9034152501) - South Campus)

§ GC Counseling Center: (903) 463-8730

§ For Any On-campus Emergencies: 911

Grayson College is not responsible for illness/injury that occurs during the normal course of classroom/lab/clinical experiences.

These descriptions and timelines are subject to change at the discretion of the Professor.

Grayson College campus-wide student policies may be found on our Current Student Page on our website:

<http://grayson.edu/current-students/index.html>