

GRAYSON COLLEGE

Course Syllabus

Course Information

BIOL 2102

Human Anatomy & Physiology Laboratory II

Sections: A01, A03, A04

Spring 2017

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

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 “courses” are in fact the same course and are separated for scheduling and reporting reasons. Your final grade is derived from the combination of your lecture and laboratory grades (60/40 respectively). Together the lecture and laboratory satisfy the state learning objectives (CS1, CT2, CT3, EQS2, and TW1) and therefore must be taken concurrently.

Prerequisite: Successful completion with a grade of C or better in BIOL 2301/2101 required.

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

Concurrent enrollment in BIOL 2302 is mandatory.

THE FOLLOWING ARE SUBJECT TO CHANGE

Course Description

BIOL 2102. Anatomy and Physiology Laboratory II. (3-0-1). Study of the structure and function of human anatomy, including neuroendocrine, integumentary, musculoskeletal, digestive, urinary, reproductive, respiratory, and circulatory systems. Content may be either integrated or specialized. In this course, students will participate in experiments, view slides and models, and dissect specimens. Topics include genetics, blood, urine, and organs of the reproductive, respiratory, urinary, cardiovascular, lymphatic, endocrine, and digestive organ systems. Prerequisite: Successful completion with a grade of C or better in BIOL 2301/2101 required. College readiness in reading required. (R)

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:

Student learning outcomes which will be addressed in laboratory and/or lecture.

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 in the text for each exercise.

Required Textbooks

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

Supplemental Materials (not required but recommended)

PhysioEx 9.0 Laboratory Simulations in Physiology with software by Peter Zao, Timothy Stabler, Lori Smith, Andrew Lokuta, and Edwin Griff
ISBN: 978-0-321-90541-3

Required Assignments & Academic Calendar

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:

MLK Holiday: No Class	January 16, 2017
First day of classes:	January 17, 2017
Last day to add/change courses:	January 20, 2017
Spring Break: No Class	March 13-17, 2017
Professional Development Day (no classes)	March 24, 2017

Last day to drop/withdraw from course:

April 18, 2017

Lecture Final Exams:

May 8-11, 2017

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

Laboratory Safety Handouts

- Exercise 39 Endocrine Structure and Function
- Exercise 41 Blood Cells
- Exercise 42 Blood Testing, procedure A only
- Exercise 43 Blood Typing,
- Exercise 44 Heart Structure
- Exercise 45 Cardiac Cycle: conduction pathways, ECG
- Exercise 47 Blood Vessel Structure, Arteries and Veins
- Exercise 48 Pulse Rate and Blood Pressure, PhysioEx, exercise 5 activities
- Exercise 63 Fetal Pig Dissection: Cardiovascular System

Lab Practical #1

- Exercise 49 Lymphatic System
- Exercise 54 Digestive Organs
- Exercise 50 Respiratory Organs
- Exercise 51 Breathing and Respiratory Volumes, PhysioEx, exercise 7 activities
- Exercise 53 Control of Breathing
- Exercise 65 Fetal Pig Dissection: Digestive System
- Exercise 64 Fetal Pig Dissection: Respiratory System

Lab Practical #2

- Exercise 56 Urinary Organs
- Exercise 57 Urinalysis, PhysioEx, exercise 9 activities
PhysioEx, exercise 10 activities
- Exercise 58 Male Reproductive System
- Exercise 59 Female Reproductive System
- Exercise 60 Fertilization and Early Development
- Exercise 61 Genetics
- Exercise 66 Fetal Pig Dissection: Urinary System
- Exercise 67 Fetal Pig Dissection: Reproductive Systems

Lab Practical #3

Comprehensive Lab Practical

Lab Schedule:

Week 1	Jan. 17-19	Endocrine: Ex. 39
Week 2	Jan. 23-26	Blood: Ex. 41, 42, 43
Week 3	Jan. 30-Feb. 2	Heart anatomy: Ex. 44, 45
Week 4	Feb. 6-9	Ex. 47, 48, <u>PhysioEx exercise 5</u>
Week 5	Feb. 13-16	Fetal Pig Dissection: Ex. 63 and Review
Week 6	Feb. 20-23	Lab Practical #1 (Ex. 39-48 & 63)

Week 7	Feb. 27-March 2	Lymphatics: Ex. 49 Digestive: Ex. 54 & Nutrition Lab <i>not in book</i> (CS1, CT2, CT3, EQS2, and TW1)
Week 8	March 6-9	Respiratory: Ex. 50 & 51
Week 9	March 13-17 March 20-23	Spring Break (no classes) Respiratory Function: Ex. 53, <u>PhysioEx exercise 7</u> Fetal Pig Dissection: Ex. 64 & 65
Week 10	March 27-30	Review and Lab Practical #2 (Ex. 49-53, 64&65, nutrition)
Week 11	April 3-6	Urinary: Ex. 56, 57, <u>PhysioEx exercise 9</u>
Week 12	April 10-13	Acid/Base <u>PhysioEx, exercise 10</u> Male Reproductive: Ex. 58
Week 13	April 17-20	Female Reproductive: Ex 59 and Ex. 66 & 67
Week 14	April 24-27	Fertilization and development: exercise 60, Genetics: exercise 61
Week 15	May 1-4	Review/Lab Practical #3, (Ex. 56-61, 66 & 67)
Week 16	May 8-11	Comprehensive Final Lab Exam/Makeup

Schedule of Labs:

Main Campus:

Mon., Wed.	R. Myers	9:30am-10:45am	S204
	P. Parsons	11:00am-12:15pm	S204
	R. Myers	1:15pm – 2:30pm	S204
Tues., Thurs.	R. Myers	8:00am-9:15am	S204
	R. Popplewell	11:00am-12:15pm	S204
	P. Parsons	7:30pm-8:45pm	S204
Mon-Thurs.	P. Parsons	4:15pm-5:30pm	S204 (1/17/17-3/9/17)

South Campus:

Mon., Wed.	K. McLaughlin	2:30pm-3:45pm	SA122
------------	---------------	---------------	-------

Schedule is subject to change as determined by the instructor. Students will receive advance notice of the changes.

Methods of Evaluation

The lecture average will constitute 60% of the final grade and the laboratory average will constitute 40% of the final grade.

Lab quizzes: Students will be given weekly quizzes over the information taught during the previous week's labs. If a student must miss a lab, they are encouraged to attend another lab session. Students may take the other instructor's quiz and must stay for the entire lab, otherwise students will receive a "0" for that quiz and for each quiz they do not take. **There will be NO quiz make-ups. The two lowest grades of these quizzes will be dropped.** The remaining quiz grades and lab reports will be averaged and will constitute 25% of the laboratory grade. A student may have the ability to earn up to 10 extra credit points during the semester.

Lab reports: You will be required to submit group lab reports over your PhysioEx simulations. These reports are generated by the simulation and include the results of the pre-lab quiz which will be checked BEFORE the activity. The lab report generated by the software includes the activity pre-lab quiz, the data from the activity, a post-lab quiz and the review questions from the activity. Each activity has its own report. These will be due at the beginning of the next lab period and will count as one quiz grade. **However, the PhysioEx and Nutrition lab reports grade may NOT be dropped.**

The lab quizzes and lab reports will constitute approximately 25% of the lab grade.

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 laboratory grade in the course. **NO make-up practicals will be given throughout the semester.** 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.

Lab Grading

Grades will be calculated in the following manner:

The two lowest quiz grades will be dropped, and the average of the quiz grades AND the lab reports will constitute 25% of the lab grade. Each lab practical constitutes 25% of the lab grade.

Course Grading

Anatomy and Physiology II is a composite course, composed of a Biology 2302 lecture section and a Biology 2102 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.**

Grades will be rounded up or down. For example, an 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

Grades to be posted on Canvas.

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, and 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 course 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.msdsonline.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

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 - 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 in each Canvas course shell under the menu item “Student Services”.

Faculty members must place a pdf formatted copy of each course syllabus in the “Personal Info” section of their portal no later than Friday of the first week of classes each semester. Place it in a Category labeled with the semester date. Faculty will maintain these syllabi in the “Personal Info” section of their portal for five years.