

## **GRAYSON COLLEGE**

### ***Course Syllabus***

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#### **Course Information**

**BIOL 2302**

**Human Anatomy & Physiology II**

**Section: A02**

**Spring 2017**

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

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#### **Professor Contact Information**

Professor name: Ryan Myers

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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

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#### **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.

Concurrent enrollment in BIOL 2102 is mandatory.

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

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#### **Course Description**

**BIOL 2302. Anatomy and Physiology II.** (3-0-3). Anatomy and Physiology II is the second part of a two course sequence. It is a study of the structure and function of the human body including the following systems: endocrine, cardiovascular, immune, lymphatic, respiratory, digestive (including nutrition), urinary (including fluid and electrolyte balance), and reproductive (including human development and genetics). Emphasis is on interrelationships among systems and regulation of physiological functions involved in maintaining homeostasis. Concurrent enrollment in BIOL 2102 is mandatory. Prerequisite: Successful completion with a grade of C or better in BIOL 2301/2101 required. College readiness in reading required. (R)

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**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 completing this course can expect lectures covering the following topics in detail, and will be tested over each section as announced by the instructor. Within each section of Anatomy and Physiology II, content may or may not be covered in the sequence presented here. Content topics need not be taught in single blocks, yet may be integrated. Unifying themes, such as homeostasis, are emphasized throughout.

- Endocrine System-Students who have completed this section of the course should be able to identify and describe the major gross and microscopic anatomical components of the endocrine system and explain the functional roles of their respective hormones in communication, control, and integration.
- Blood and Cardiovascular System-Students who have completed this section of the course should be able to identify and describe the major gross and microscopic anatomical components of the blood and cardiovascular system and explain their functional roles in transport and hemodynamics.
- Lymphatic System-Students who have completed this section of the course should be able to identify and describe the major gross and microscopic anatomical components of the lymphatic system and explain their functional roles in fluid dynamics and immunity.
- Digestion and Nutrition-Students who have completed this section of the course should be able to identify and describe the major gross and microscopic anatomical components of the digestive system and explain their functional roles in digestion, absorption, nutrition, metabolism, excretion, and elimination.

- Respiratory System-Students who have completed this section of the course should be able to identify and describe the major gross and microscopic anatomical components of the respiratory system and explain their functional roles in breathing, ventilation and in the processes of external and internal respiration.
- Urinary System-Students who have completed this section of the course should be able to identify and describe the major gross and microscopic anatomical components of the urinary system and explain their functional roles.
- Fluid/Electrolyte and Acid/Base Balance-Students who have completed this section of the course should be able to identify and describe the physiology of the homeostatic mechanisms that control fluid/electrolyte and acid/base balance.
- Reproductive System-Students who have completed this section of the course should be able to identify and describe the major gross and microscopic anatomical components of the reproductive system and explain their functional roles in reproduction and inheritance.
- Growth and Development-Students who have completed this section of the course should be able to describe and explain the anatomical and physiological changes from conception to senescence.
- Genetics-Students who have completed this section of the course should be able to explain Mendelian inheritance in the human organism along with gene therapies currently in use.

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## Required Textbooks

Hole's Human Anatomy and Physiology, 14<sup>th</sup> edition, by David Shier, Jackie Butler, and Ricki Lewis, McGraw-Hill Publishers, ISBN 9780078024290 (hard copy) or 9781259384998 (loose leaf).

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## 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

Chapters 13-24 of the text are covered during this course. Specific objectives are listed at the beginning of each chapter. The main topics covered are:

### **Chapter 13: Endocrine System**

- A. General Characteristics of the Endocrine System
- B. Hormone Action
- C. Control of Hormonal Secretions
- D. Pituitary Gland
- E. Thyroid Gland
- F. Parathyroid Glands
- G. Adrenal Glands
- H. Pancreas
- I. Other Endocrine Glands
- J. Stress and Its Effects
- K. Life-Span changes
- L. Clinical Terms Related to the Endocrine System

### **Chapter 14: Blood**

- A. Blood and Blood Cells
- B. Blood Plasma
- C. Hemostasis
- D. Blood Groups and Transfusions
- E. Clinical Terms Related to the Blood

### **Chapters 15: Cardiovascular System**

- A. Structure of the Heart
- B. Heart Actions
- C. Blood Vessels
- D. Blood Pressure
- E. Paths of Circulation
- F. Arterial System
- G. Venous System
- H. Life-Span Changes
- I. Clinical Terms Related to the Cardiovascular System

### **Test #1**

### **Chapter 16: Lymphatic System and Immunity**

- A. Lymphatic Pathways
- B. Tissue Fluid and Lymph
- C. Lymph Movement
- D. Lymph Nodes
- E. Thymus and Spleen
- F. Body Defenses Against Infection
- G. Innate (Nonspecific) Defenses
- H. Adaptive (Specific) Defenses or Immunity
- I. Life-Span Changes
- J. Clinical Terms Related to the Lymphatic System Immunity

## **Chapters 17: Digestive System**

- A. General Characteristics of the Alimentary Canal
- B. Mouth
- C. Salivary Glands
- D. Pharynx and Esophagus
- E. Stomach
- F. Pancreas
- G. Liver
- H. Small Intestine
- I. Large Intestine
- J. Life-Span Changes
- K. Clinical Terms Related to the Digestive System

## **Chapter 18: Nutrition and Metabolism**

- A. Why We Eat
- B. Carbohydrates
- C. Lipids
- D. Proteins
- E. Energy Expenditures
- F. Vitamins
- G. Minerals
- H. Healthy Eating
- I. Life-Span Changes
- J. Clinical Terms Related to Nutrition and Metabolism

## **Test #2**

## **Chapters 19: Respiratory System**

- A. Why We Breathe
- B. Organs of the Respiratory System
- C. Breathing Mechanisms
- D. Control of Breathing
- E. Alveolar Gas Exchanges
- F. Gas Transport
- G. Life-Span Changes
- H. Clinical Terms Related to the Respiratory System

## **Chapter 20: Urinary System**

- A. Kidneys
- B. Urine Formation
- C. Elimination of Urine
- D. Life-Span Changes
- E. Clinical Terms Related to the Urinary System

## **Chapters 21: Water, Electrolyte, and Acid-Base Balance**

- A. Distribution of Body Fluids

- B. Water Balance
- C. Electrolyte Balance
- D. Acid Base Balance
- E. Clinical Terms Related to Water, Electrolyte, and Acid-Base Balance

### **Test #3**

#### **Chapter 22: Reproductive Systems**

- A. Organs of the Male Reproductive System
- B. Testes
- C. Male Internal Accessory Organs
- D. Male External Reproductive Organs
- E. Hormonal Control of the Male Reproductive Functions
- F. Organs of the Female Reproductive System
- G. Ovaries
- H. Female Internal Accessory Organs
- I. Female External Reproductive Organs
- J. Hormonal Control of the Female Reproductive Functions
- K. Mammary Glands
- L. Birth Control
- M. Sexually Transmitted Diseases
- N. Clinical Terms Related to the Reproductive System

#### **Chapter 23: Pregnancy, Growth, and Development**

- A. Pregnancy
- B. Prenatal Period
- C. Postnatal Period
- D. Aging
- E. Clinical Terms Related to Human Growth and Development

#### **Chapter 24: Genetics and Genomics**

- A. The Emerging Role of Genetics and Genomics in Medicine
- B. Modes of Inheritance
- C. Gene Expression
- D. Complex Traits
- E. Matters of Sex
- F. Chromosome Disorders
- G. Gene Therapy

### **Test # 4**

#### **Comprehensive Final Exam**

## SEQUENCE OF INSTRUCTION:

Week 1	Jan. 17-19	Chapter 13. Endocrine System
Week 2	Jan. 23-26	Chapter 14. Blood
Week 3	Jan. 30-Feb. 2	Chapter 15. Cardiovascular System
<b>Week 4</b>	<b>Feb. 6-9</b>	<b>Test #1</b>
Week 5	Feb. 13-16	Chapter 16. Lymphatic System & Immunity
Week 6	Feb. 20-23	Chapter 17. Digestive System
Week 7	Feb. 27-March 2	Chapter 18. Nutrition & Metabolism
<b>Week 8</b>	<b>March 6-9</b>	<b>Test #2</b>
	<b>March 13-17</b>	<b>Spring Break (no classes)</b>
Week 9	March 20-23	Chapter 19. Respiratory System
Week 10	March 27-30	Chapter 20. Urinary System
Week 11	April 3-6	Chapter 21. Water, Electrolyte and Acid-Base Balance
<b>Week 12</b>	<b>April 10-13</b>	<b>Test #3</b>
Week 13	April 17-20	Chapter 22. Reproductive Systems
Week 14	April 24-27	Chapter 23. Pregnancy, Growth and Development
Week 15	May 1-2	Chapter 24. Genetics and Genomics
<b>Week 15</b>	<b>May 3-4</b>	<b>Test #4</b>
<b>Week 16</b>	<b>May 8-11</b>	<b>Comprehensive Final, optional</b>

## 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
<b>Week 6</b>	<b>Feb. 20-23</b>	<b>Lab Practical #1 (Ex. 39-48 &amp; 63)</b>
		Lymphatics: Ex. 49
Week 7	Feb. 27-March 2	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
	<b>March 13-17</b>	<b>Spring Break (no classes)</b>
Week 9	March 20-23	Respiratory Function: Ex. 53, <u>PhysioEx exercise 7</u>
		Fetal Pig Dissection: Ex. 64 & 65
<b>Week 10</b>	<b>March 27-30</b>	<b>Review and Lab Practical #2 (Ex. 49-53, 64&amp;65, nutrition)</b>
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
<b>Week 15</b>	<b>May 1-4</b>	<b>Review/Lab Practical #3, (Ex. 56-61, 66 &amp; 67)</b>
<b>Week 16</b>	<b>May 8-11</b>	<b>Comprehensive Final Lab Exam/Makeup</b>

## Schedule of Lectures

### Main Campus:

Mon., Wed.	P. Parsons	9:30am-10:45am	S107
	R. Myers	11:00am-12:15pm	S107
Tues., Thurs.	R. Popplewell	9:30am-10:45am	S201
	P. Parsons	6:00pm-7:15pm	S107
Mon.-Thurs	P. Parsons	2:45pm-4:00pm	S204 (1/17/17-3/9/17)

### South Campus:

Mon., Wed.	K. McLaughlin	1:00am-2:15pm
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Schedule is subject to change as determined by the instructor. Students will receive advance notice of the changes.

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## Methods of Evaluation

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

Daily work, which may consist of chapter quizzes, study questions, post tests, or on-line activities, will be required of students. Daily work will constitute 20% of the lecture grade. Four major examinations will be given at scheduled times throughout the semester. Dates of the examinations will be announced in class. **There will be no makeups on the daily work or on exams after it has been returned to the students. Two lowest lecture quizzes will be dropped.** Students not taking the exam will receive a "0". Exams may be taken early as scheduled with the instructor for special circumstances. Exams may consist of multiple choice, matching, short answer, fill-in-the-blank, true and false and/or discussion questions. Graded exams will be returned to the students. After the student examines the test, it will be returned to the instructor. Each exam will constitute 20% of the lecture grade.

A student may have the ability to earn up to 10 extra credit points during the semester. The extra credit points will be added to the total number of points before dividing by five to derive the lecture average.

An optional comprehensive final will be given at the time scheduled by the college. Students who have not taken all four exams must take the final. Students who have taken all four exams have the option of taking the final to replace the lowest exam grade. The final cannot be used to replace the daily work average.

## Lecture Grading

Grades will be calculated in the following manner:

Add the daily grade average, four exams, and the optional final exam (if it is not higher than the



lowest of the four exams), and the extra credit, then divide by five to get the lecture average. 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.

## 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.**

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.*

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## Methods of Instruction

Lectures by the instructor will be the main method of instruction. Group work, class discussions, Powerpoint presentations, overhead transparencies, skits, models, etc., may also be incorporated to enhance the learning process.

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## 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.

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## **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 course average.

### **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.

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### **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
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**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.*