



BIOL 2114: Anatomy & Physiology II
COURSE SYLLABUS
Lecture - Monday
Spring 2016

Semester: Spring 2016

Course Title: Anatomy & Physiology II

Course Number: BIOL 2114

Credit Hours/ Minutes: 3 / 2250

Class Location: Bldg 8, 8147A

Class Meets: 2:30-5:00 M

CRN: 40061

Instructor: Erica M. Harrison

Office Hrs: 7:30-9:30 MW, 7:30-10:30 TR

Office Location: Room 901 HSA

Email Address: eharrison@southeasterntech.edu

Phone: 912-538-3188

Fax Number: 912-538-3156

Tutoring Hours: By Appointment.

REQUIRED TEXTS:

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¹Principles of Anatomy and Physiology, Tortora/Grabowski, 14th Edition, John Wiley & Sons, Inc.

²Exercises for the Anatomy & Physiology Laboratory, Erin Amerman, 2nd Edition, Morton Publishing Inc.

³A Photographic Atlas for the Anatomy and Physiology Laboratory, 7th Edition, Morton Publishing Inc.

REQUIRED SUPPLIES: Ink pens, highlighter, and any other supplies deemed necessary by instructor.

COURSE DESCRIPTION:

Continues the study of the anatomy and physiology of human body. Topics include: endocrine system, cardiovascular system, blood and lymphatic system, immune system, respiratory system, digestive system, urinary system, and reproductive system. Lab experience supports the classroom learning.

MAJOR COURSE COMPETENCIES:

1. The Endocrine System
2. The Cardiovascular System
3. The Blood and Lymphatic System
4. The Immune System
5. The Respiratory System
6. The Digestive System
7. The Urinary System
8. The Reproductive System

GENERAL EDUCATION CORE COMPETENCIES: STC has identified the following general education core competencies that graduates will attain:

1. The ability to utilize standard written English.
2. The ability to solve practical mathematical problems.
3. The ability to read, analyze, and interpret information.

All students pursuing a degree, a diploma, or a Technical Certificate of Credit with a General Education component will be required to pass the General Education Competency Exams prior to graduation.

Pre-requisite: BIOL 2113 and 2113L

Co-requisites: BIOL 2114L

COURSE OUTLINE

| Competency | After completing this section, the student will be able to: | Hours | | |
|---------------------------------------|--|----------|----------|------------------|
| | | Class | D.Lab | P.Lab/ O.B.I. |
| THE ENDOCRINE SYSTEM | | 4 | 0 | 3 |
| Functions | Discuss the functions of the endocrine system in maintaining homeostasis. | | | |
| | Contrast the endocrine and nervous systems. | | | |
| | Explain the general mechanisms by which hormones work. | | | |
| | Discuss the control of endocrine organs. | | | |
| | Describe the role of the hypothalamus in endocrine control. | | | |
| Endocrine hormones | Describe the location, hormones, and functions of the following endocrine glands: pituitary, thyroid, parathyroid, adrenal, pancreas, ovaries, testes, pineal, and thymus. | | | |
| Endocrine disorders | Describe endocrine disorders of hypo- and hypersecretion. | | | |
| THE CARDIOVASCULAR SYSTEM | | 7 | 0 | 6 |
| The heart | Describe the anatomy of the heart and heart wall. | | | |
| | Describe the flow of blood through the heart including the pulmonary and systemic circuits. | | | |
| | Explain the structural and functional features of the conduction system of the heart and EKG tracings. | | | |
| | Describe the principal events of the cardiac cycle. | | | |
| | Contrast the sounds of the heart and their clinical significance. | | | |
| | Calculate cardiac output and discuss factors that affect it. | | | |
| | List the risk factors involved in heart disease. | | | |
| Vessels and their routes | Contrast the structure and function of the various types of blood vessels. | | | |
| | Explain how the venous blood is returned to the heart. | | | |
| | Explain blood pressure and pulse. | | | |
| | Discuss the factors that affect blood pressure. | | | |
| | Contrast the clinical significance of systolic, diastolic, and pulse pressure. | | | |
| | Discuss the mechanism of capillary exchange. | | | |
| | Describe blood flow through systemic and pulmonary circuits. Identify the principal arteries and veins of the systemic, pulmonary, and hepatic portal circulations. | | | |
| | Describe unique aspects of fetal circulation. | | | |
| Cardiovascular disease | Explain the effects of exercise on the cardiovascular system. | | | |
| | Describe significant cardiovascular diseases including coronary artery disease and congestive heart failure. | | | |
| THE BLOOD AND LYMPHATIC SYSTEM | | 4 | 0 | 2 |
| Components and functions | Discuss the function and physical characteristics of blood, lymph, and-interstitial fluid, and the lymphatic system. | | | |
| | List the components of plasma and their functions. | | | |
| | List the characteristics and functions of formed elements. | | | |

| Competency | After completing this section, the student will be able to: | Hours | | |
|--|---|----------|----------|------------------|
| | | Class | D.Lab | P.Lab/ O.B.I. |
| | List the lymphoid cells including lymphocytes (T and B cells), plasma cells, macrophages and reticular cells. | | | |
| | Discuss lymphoid organs including lymph nodes, bone marrow, spleen, thymus, tonsils and nodule aggregates. | | | |
| Clotting | Identify the stages involved in hemostasis. | | | |
| Blood types | Explain the ABO and Rh blood grouping systems. | | | |
| Blood diseases and disorders | Discuss causes of anemia. | | | |
| | Describe selected blood disorders and tests. | | | |
| THE IMMUNE SYSTEM | | 3 | 0 | 2 |
| Resistance | Discuss the basic properties of immunity. | | | |
| | Discuss innate and adaptive immunity. | | | |
| | Explain the process of cellular immunity and the role of T-cells. | | | |
| | Explain the process of humoral immunity and the role of B-cells and antibodies. | | | |
| | Discuss the difference between primary and secondary responses. | | | |
| | Describe types of active and passive immunity. | | | |
| Immune system diseases and disorders | Describe selected immune disorders. | | | |
| THE RESPIRATORY SYSTEM | | 5 | 0 | 3 |
| Respiratory system characteristics and functions | Identify the organs of the respiratory system and describe their functions. | | | |
| | Contrast internal and external respiration and explain the role of the alveolar-capillary membrane. | | | |
| | Describe the events involved in pulmonary ventilation and discuss the significance of pleura. | | | |
| | Explain the mechanism of oxygen and carbon dioxide transport in the blood. | | | |
| | Describe the various factors that control the rate of respiration. | | | |
| Respiratory disorders | Define selected disorders of the respiratory system. | | | |
| THE DIGESTIVE SYSTEM | | 5 | 0 | 6 |
| Digestive system functions and processes | Identify the organs of the gastrointestinal tract and the accessory organs of digestion and their functions in digestion. | | | |
| | Identify the general histological layers of the digestive organs and explain how the layers are modified to accommodate the function of each organ. | | | |
| | Describe the mechanical movements of the GI tract. | | | |
| | Identify the major digestive secretions and their functions. | | | |
| | List the enzymes involved in the breakdown of carbohydrates, fats, and proteins. | | | |
| | Describe the process of absorption of fats, carbohydrates, and proteins. | | | |
| | Define the processes involved in the formation of feces and defecation. | | | |
| Digestive disorders | Describe common disorders of the digestive system. | | | |

| Competency | After completing this section, the student will be able to: | Hours | | |
|---|--|----------|----------|------------------|
| | | Class | D.Lab | P.Lab/ O.B.I. |
| General metabolism | Discuss carbohydrate, fat, and protein metabolism. | | | |
| | Discuss metabolic rate and the role of the liver in metabolism. | | | |
| | Describe the absorptive and post-absorptive states. | | | |
| THE URINARY SYSTEM | | 5 | 0 | 4 |
| Urinary system functions and processes | Identify the external and internal gross anatomical features of the kidneys. | | | |
| | Discuss the formation of urine explaining the microscopic anatomy of the nephron and its basic functions of filtration, reabsorption, and secretion. | | | |
| | Discuss the role of the kidney in maintaining blood pressure and the function of the juxtaglomerular apparatus. | | | |
| | Explain the role of key hormones on the kidney and their role in water and electrolyte balance. | | | |
| | Discuss the role of the kidney in homeostasis of pH. | | | |
| | Discuss the components of urine. | | | |
| | Discuss the structure and physiology of the ureters, urinary bladder, and urethra. | | | |
| Urinary system disorders | Describe disorders of the urinary system. | | | |
| THE REPRODUCTIVE SYSTEM | | 7 | 0 | 4 |
| Male system | Explain the structure and functions of the male reproductive organs and the pathway of sperm. | | | |
| | Discuss the processes of spermatogenesis and spermiogenesis in the male. | | | |
| | Describe the normal composition of semen and the role of the accessory sex glands in production of semen. | | | |
| | Discuss the role of hormones in the male reproductive system. | | | |
| Female system | Explain the structure and functions of the female reproductive organs and the pathway of the egg /zygote. | | | |
| | Discuss the process of oogenesis. | | | |
| | Discuss the principal events of the menstrual and ovarian cycles and explain all hormones involved. | | | |
| | Discuss the physiology of sexual intercourse. | | | |
| Reproductive system disorders and disease | Discuss examples of male and female reproductive diseases. | | | |

EVALUATION PROCEDURES

In order to sit for the final exam, a student must maintain a Lecture Test and Lab Test Average of 70 or above prior to the date of the scheduled final. Grades of 69.9 will not be rounded up.

Assignments, lab reports, or presentation grades are not included in Tests averages, only Tests grades. If the student has below a 70 average, the student will be given a letter grade based on tests average.

THERE WILL BE NO DROP GRADE FOR LECTURE OR LAB.

Lecture Examinations:

Students will be allowed to make-up **one** lecture examination, excluding the final examination, due to an **excused absence** approved by the instructor. **Any other lecture exam missed will result in an automatic grade of zero.** There will be one day designated for the make-up Lecture exam. It will be scheduled at the end of the semester. Failure to take a make-up exam on the specified date will result in a grade of zero.

Final Examination:

A comprehensive final examination will be given at the end of the semester. There will be **no make-up exam** for the final examination. Failure to take the final examination on the specified date will result in a grade of zero. The final exam will include all chapters covered.

Assignments:

Students are required to read each chapter and complete learning objectives for each chapter. Learning objectives are found on the M Drive. All completed learning objectives should be **hand written** in blue ink and turned in EACH WEEK in lab report. Additional Assignments are stipulated in the Lesson Plan and can be found on the M. Drive as well. All assignments are due on dates delineated on Lesson Plan.

Group Project/Presentation:

Students will work in small groups (3-5 people/group) and give an educational Power Point presentation on a disease or disorder that affects certain body systems related to chapters we will cover in this course. List of topics to choose from along with guidelines for arrangement, content, requirements, and rubric for Power Point presentations are provided on STC's "M" drive. Presentations should be 15-20 minutes long. Please ensure presentations are within time limit. Do not exceed 20 minutes or do not present less than 15 minutes. Points will be deducted if presentation is over or under time limit. You are required to include visual aid or short video clips or any materials/media that will enhance presentation. However, video clips should not exceed 3-4 minutes. Each presentation should not exceed 2 video clips. Points will be deducted for additional video clips. Group members should have **equal participation** for this project. The week before presentations, instructor will ask all group members for feedback on equal participation. Feedback on equal participation includes but not limited to the following: participating at group meetings during Lecture/Lab or out of class meetings, corresponding/communicating in a timely manner with group members to provide information on assigned portion of project, and providing pertinent information regarding assigned portion of project. The week of Presentation (date indicated on lesson plan), **all presentations should be submitted to instructor and saved on Instructor's Computer (Desktop) prior to the designated presentation day.**

STUDENT REQUIREMENTS:

Students are responsible for the policies and procedures in the STC E-Catalog. During an examination, students are required to place all textbooks and personal property on the floor or counter located in the back or to the side of the classroom. Students are to be seated with an empty seat between each student. No talking is allowed once the test begins. **Students found with cell phone or any other personal communication device during a test will be considered cheating and given a grade zero. This also applies to students who have completed/submitted test to instructor and using cell phone in classroom while testing is still in progress or others are still testing.**

NO EATING/DRINKING IS ALLOWED IN LAB OR CLASSROOMS.

Students are expected to exhibit professional behavior at all times. Each student must show respect and concern for fellow students and for the course instructor. Insubordination will not be tolerated, and disciplinary measures will be enacted. No cell phones or pagers are allowed to be turned on in the classroom. Personal phone calls must be handled after class. Watches with alarms should not be programmed to sound during class.

ATTENDANCE GUIDELINES: Class attendance is a very important aspect of a student's success. Being absent from class prevents students from receiving the full benefit of a course and also interrupts the learning process. Southeastern Technical College considers both tardiness and leaving early as types of absenteeism. Responsibility for class attendance rests with the student. Regular and punctual attendance at all scheduled classes is required for student success. Students will be expected to complete all work required by the instructor as described in the individual course syllabus.

Instructors have the right to give unannounced quizzes/assignments. Students who miss an unannounced quiz or assignment will receive a grade of 0. Students who stop attending class, but do not formally withdraw, may receive a grade of F and face financial aid repercussions in upcoming semesters.

ADDITIONAL ATTENDANCE PROVISIONS***Health Sciences***

Requirements for instructional hours within Health Science and Cosmetology programs reflect the rules of respective licensure boards and/or accrediting agencies. Therefore, these programs have stringent attendance policies. Each program's attendance policy is published in the program's handbook and/or syllabus which specify the number of allowable absences. All provisions for required make-up work in the classroom or clinical experiences are at the discretion of the instructor.

Attendance is counted from the first scheduled class meeting of each semester. To receive credit for a course a student must attend at least 90% of the scheduled instructional time. Time and/or work missed due to tardiness or absences must be made up at the convenience of the instructor. Any student attending less than the required scheduled instructional time (90%) may be dropped from the course as stated below in the Withdrawal Procedure.

Tardy means arriving after the scheduled time for instruction to begin. Early departure means leaving before the end of the scheduled time. Three (3) tardies or early departures equal one (1) absence for the course.

For this class, which meets 1 day a week for 16 weeks, the maximum number of days a student may miss is 2 days during the semester.

SPECIAL NEEDS: Students with disabilities who believe that they may need accommodations in this class based on the impact of a disability are encouraged to contact Jan Brantley, Room 1208 Swainsboro Campus, 478-289-2274, or Helen Thomas, Room 108 Vidalia Campus, 912-538-3126, to coordinate

reasonable accommodations.

SPECIFIC ABSENCES: Provisions for Instructional Time missed because of documented absences due to jury duty, military duty, court duty, or required job training will be made at the discretion of the instructor.

PREGNANCY: Southeastern Technical College does not discriminate on the basis of pregnancy. However, we can offer accommodations to students who are pregnant that need special consideration to successfully complete the course. If you think you will need accommodations due to pregnancy, please advise me and make appropriate arrangements with the Special Needs Office. Swainsboro Campus: Jan Brantley, Room 1208, (478) 289-2274 -- Vidalia Campus: Helen Thomas, Room 108, (912) 538-3126.

WITHDRAWAL PROCEDURE: Students wishing to officially withdraw from a course(s) or all courses after the drop/add period and prior to the 65% portion of the semester (date will be posted on the school calendar) must speak with a Career Counselor in Student Affairs and complete a Student Withdrawal Form. A grade of "W" is assigned when the student completes the withdrawal form from the course.

Students who are dropped from courses due to attendance (see your course syllabus for attendance policy) after drop/add until the 65% point of the semester will receive a "W" for the course. Abandoning a course(s) instead of following official withdrawal procedures may result in a grade of 'F' being assigned.

After the 65% portion of the semester, the student will receive a grade for the course. (Please note: A zero will be given for all missed assignments.)

There is no refund for partial reduction of hours. Withdrawals may affect students' eligibility for financial aid for the current semester and in the future, so a student must also speak with a representative of the Financial Aid Office to determine any financial penalties that may be assessed due to the withdrawal. All grades, including grades of 'W', will count in attempted hour calculations for the purpose of Financial Aid.

Remember - Informing your instructor that you will not return to his/her course does not satisfy the approved withdrawal procedure outlined above.

ACADEMIC DISHONESTY POLICY: The STC Academic Dishonesty Policy states *All forms of academic dishonesty, including but not limited to cheating on tests, plagiarism, collusion, and falsification of information, will call for discipline.* The policy can also be found in the *STC Catalog and Student Handbook.*

Procedure for Academic Misconduct

The procedure for dealing with academic misconduct and dishonesty is as follows:

--First Offense--

Student will be assigned a grade of "0" for the test or assignment. Instructor keeps a record in course/program files and notes as first offense. The instructor will notify the student's program advisor, academic dean, and the Registrar at the student's home campus. The Registrar will input the incident into Banner for tracking purposes.

--Second Offense--

Student is given a grade of "WF" for the course in which offense occurs. The instructor will notify the student's program advisor, academic dean, and the Registrar at the student's home campus indicating a "WF" has been issued as a result of second offense. The Registrar will input the incident into Banner for tracking purposes.

--Third Offense--

Student is given a grade of "WF" for the course in which the offense occurs. The instructor will notify the student's program advisor, academic dean, and the Registrar at the student's home campus indicating a "WF" has been issued as a result of second offense. The Vice President for Student Affairs, or designee, will notify

the student of suspension from college for a specified period of time. The Registrar will input the incident into Banner for tracking purposes.

STATEMENT OF NON-DISCRIMINATION: Southeastern Technical College does not discriminate on the basis of race, color, creed, national or ethnic origin, gender, religion, disability, age, disabled veteran, veteran of Vietnam Era or citizenship status, (except in those special circumstances permitted or mandated by law). This school is in compliance with Title VI of the Civil Rights Act of 1964, which prohibits discrimination on the basis of race, color, or national origin; with the provisions of Title IX of the Educational Amendments of 1972, which prohibits discrimination on the basis of gender; with the provisions of Section 504 of the Rehabilitation Act of 1973, which prohibits discrimination on the basis of handicap; and with the American with Disabilities Act (ADA).

GRIEVANCE PROCEDURES: Grievance procedures can be found in the Catalog and Handbook located on STC's website.

ACCESS TO TECHNOLOGY: Students can now access Angel, Blackboard, Remote Lab Access, Student Email, Library Databases (Galileo), and BannerWeb via the mySTC portal or by clicking the Current Students link on the STC website at www.southeasterntech.edu.

GRADING SCALE:

| | | |
|----------------|--------------|----------|
| Grading Scale: | | |
| A | Excellent | 100 - 90 |
| B | Good | 89 - 80 |
| C | Satisfactory | 79 - 70 |
| D | Poor | 69 - 60 |
| F | Failing | 59 - 0 |

Each Students final grade for the course will be calculated in the following manner...

(Chapter Tests.)x 0.60 = _____
 (Learning Objectives).....x 0.05 = + _____
 (Group Presentation).....x 0.05 = + _____
 (Comprehensive Final).....x 0.30 = + _____

TCSG GUARANTEE/WARRANTY STATEMENT:

The Technical College System of Georgia guarantees employer that graduates of State Technical Colleges shall possess skills and knowledge as prescribed by State Curriculum Standards. Should any graduate employee within two years of graduation be deemed lacking in said skills, that student shall be retrained in any State Technical College at no charge for instructional costs to either the student or the employer.

GRADING COMPONENTS:

| | |
|--------------------------|-----|
| Chapter Tests | 60% |
| Learning Objectives | 5% |
| Group Presentation | 5% |
| Comprehensive Final Exam | 30% |

****Disclaimer Statements****

******Instructor reserves the right to change the syllabus and/or lesson plan as necessary.******

*****The official copy of the syllabus is located on the STC M Drive and will be discussed on the first day of class. The syllabus displayed in advance of the semester in any location other than the course you are enrolled in (folder on M Drive) is for planning purposes only.*****

BIOL 2114 Lecture Lesson Plan (MONDAY)
Subject to change at the Instructors discretion

| Date | Lecture Chapter(s) & Content | Tests (Chapters) | Competency Area |
|-------------|---|--|------------------------|
| 1/11 | Intro to Course, Syllabus, Outline, Regulation, etc. Chapter 18: Endocrine System | <ul style="list-style-type: none"> Read Chapters before coming to Lecture and complete Learning Objectives (on M Drive). Complete Self-Assessment (SA) Quizzes at end of each chapter. Due each lab day & place in lab report. | *CC 1,2 **GCC a-d |
| 1/18 | Chapter 19: Cardio. Sys. Blood Chapter 20: Cardio. Sys. Heart | | *CC 1,2 **GCC a-d |
| 1/25 | Lecture Test # 1 Chapter 21: Cardio. Sys. Blood Vessels | Lecture Test #1 (Ch: 18-19) | *CC 1-5 **GCC a-d |
| 2/1 | LAB Test #1 Chapter 22: Lymphatic System | Lab Test #2 (Ch: 19,19,20,21) | *CC 1-5 **GCC a-d |
| 2/8 | Lecture Test # 2 Chapter 23: Respiratory System Chapter 24: Digestive System | Lecture Test #2 (Ch: 20-21) | *CC 1-6 **GCC a-d |
| 2/15 | Lecture Test # 3 Chapter 25: Metabolism and Nutrition Chapter 26: Urinary System Anatomy | Lecture Test #3 (Ch: 22-23) | *CC 5-8 **GCC a,c,d |
| 2/22 | LAB Test #2 Chapter 27: Fluid and Electrolyte Balance Chapter 28: Reproductive System | LAB Test #2 (Ch: 22-23) | *CC 5-8 **GCC a,c,d |
| 2/29 | Lecture Test # 4 Chapter 26 | Lecture Test #4 (Ch: 24-25) | *CC 5,6 **GCC a-d |
| 3/7 | Chapter 27-28 | | *CC 1-8 **GCC a-d |
| 3/14 | Lecture Test # 5 | Lecture Test #5 (Ch: 26-27) | *CC 1-8 **GCC a-d |
| 3/21 | Presentations | Presentations: Groups of 2-3 students. 15-20 minutes. Visual aid required. Printed power point (handout-3 slides/pg) to place in lab notebook. Instructions on M-Drive | *CC 1-8 **GCC a-d |
| 3/28 | SPRING BREAK | NO CLASSES | |
| 4/4 | Presentations | | *CC 1-8 **GCC a-d |
| 4/11 | LAB Test #3 | LAB Test #3 (Ch: 24-25) | *CC 1-8 **GCC a-d |
| 4/18 | LAB Test #4 /Make up day | LAB Test #4 (Ch:26-28) | *CC 7-9 **GCC a-d |
| 4/25 | Research Assignment – see M drive | | *CC 7-9 **GCC a-d |
| 5/2 | FINALS-LAB & LECTURE | Comprehensive: all chapters (18-28) Lab and Lecture | *CC 7-9 **GCC a-d |

COURSE COMPETENCY AREAS (CC):

1. The Endocrine System
2. The Cardiovascular System
3. The Blood and Lymphatic System
4. The Immune System
5. The Respiratory System
6. The Digestive System
7. The Urinary System
8. The Reproductive System

GENERAL EDUCATION CORE COMPETENCIES (GC)

Southeastern Technical College has identified the following general education core competencies that graduates will attain:

- a) The ability to utilize standard written English.
- b) The ability to solve practical mathematical problems.
- c) The ability to read, analyze, and interpret information.
- d) The ability to effectively utilize basic computer skills.