BIOL 2113: Anatomy & Physiology I
COURSE SYLLABUS
Lecture – Tuesday
Fall Semester 2015

Semester: Fall 2015
Course Title: Anatomy & Physiology I
Course Number: BIOL 2113
Credit Hours/ Minutes: 3 / 2250
Class Location: TBA
Class Meets: 5:30-8:00pm Monday
CRN: 20336

Instructor: Erica Harrison
Email address: eharrison@gmail.com
Office Location: TBA
Office hours: 1:30-2:30 TR
Phone: TBA
Fax Number: 912-538-3106

REQUIRED TEXTS:
[1]Principles of Anatomy and Physiology, Tortora/Grabowski,14th Edition, John Wiley & Sons, Inc.
[2]Exercises for the Anatomy & Physiology Laboratory, Erin Amerman, 2nd Edition, Morton Publishing Inc.
[3]A Photographic Atlas for the Anatomy and Physiology Laboratory, 7th Edition, Morton Publishing Inc.

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

COURSE DESCRIPTION:
Course introduces the anatomy and physiology of the human body. Emphasis is placed on the development of a systemic perspective of anatomical structures and physiological processes. Topics include: body organization, cell structure and functions, tissue classifications, integumentary system, skeletal system, muscular system, and nervous and sensory systems.

MAJOR COURSE COMPETENCIES:
1. Body Organization and Chemical Basis of Life
2. Cell Structure and Function
3. Tissue Classifications
4. The Integumentary System
5. The Skeletal System
6. The Muscular System
7. The Nervous and Sensory Systems

Pre-requisite: Regular admission
Co-requisites: BIOL 2113L, ENGL 1101

COURSE OUTLINE

Body Organization and Chemical Basis of Life

1. Define the terms anatomy and physiology
2. Describe the basic biological functions necessary for survival.
3. Define anatomical position.
4. Identify descriptive body terms, planes-abdominopelvic regions and quadrants, directional terms as they relate to anatomical position, body membranes and cavities.
5. Discuss complementarity between structure and function
6. Describe the various organizational levels of the human body.
7. Define homeostasis and metabolism.
8. Define positive and negative feedback cycles and provide examples of each.
9. Describe basic atomic structure. Cognitive Knowledge
10. Define the terms molecule, element, compound, mixture, solution, solvent and solute and give examples of each.
11. Describe and give examples of covalent (non-polar and polar), ionic and hydrogen bonding.
12. Describe water as an inorganic compound and universal solvent.
13. List the major elements present in the body.
14. Discuss and give examples of the most important carbohydrates, proteins, lipids and nucleic acids found in the body and relate these substances to specific body structures or functions.
15. Describe intermediary metabolism. Cognitive Knowledge
16. Describe pH scale, acids and bases.

CELL STRUCTURE AND FUNCTIONS:

1. Describe the structure of a typical cell.
2. List the organelles and discuss the functions of each.
3. Describe the types of movement of materials across the cell membranes and relate these to functions of the cells of the body.
4. Discuss the molecular structure of DNA in relation to hereditary characteristics.
5. Discuss mitosis and meiosis.

TISSUE CLASSIFICATIONS:

1. Define the term tissue and histology.
2. Identify the four major types of tissue in the body and their basic functions.
3. Describe the structure, function, and location of epithelial tissues in the body.
4. Describe the structure, function, and location of connective tissues in the body and contrast these to epithelial tissues.
5. Compare and Contrast the three forms of muscle tissue: skeletal, smooth and cardiac.
6. Describe the structure, function, and location of nervous tissue in the body.
7. Classify the membranes of the body and provide examples of each.
8. Describe the basic steps in tissue repair.

THE INTEGUMENTARY SYSTEM:

1. Discuss the functions of the skin as an organ system and its role in the homeostasis of body temperature.
2. Describe the layers, structural components, and functions of the epidermis dermis and hypodermis.
3. Describe the basic structure and function of epidermal derivatives such as hair, nails, sweat, sebaceous and ceruminous glands.
4. Discuss the classification of burns by degree and surface areas involved.
5. Discuss the three principal types of skin cancer and differentiate among them.

THE SKELETAL SYSTEM:

1. Discuss the components and functions of the skeletal system.
2. Discuss the basic anatomy of long and flat bones.
3. Describe the histological features of compact and spongy bone tissue.
4. Compare and Contrast intramembranous ossification and endochondral ossification.
5. Define interstitial and appositional bone growth.
6. Describe the process of bone remodeling and fracture repair.
7. Classify the principal types of bones on the basis of shape and location.
8. Describe the various markings on the surface of bones.
9. Identify the bones and principal markings of the bones of the axial skeleton.
10. Identify the bones and principal markings of the bones of the appendicular skeleton.
11. Define an articulation and identify the factors that determine the types and degree of movement at a joint.
12. Classify joints based on their structure and function using proper terminology.
13. Describe the major movements allowed by synovial joints. Cognitive Knowledge
14. Describe selected articulations of the body with respect to the bones that enter into their formation, structural classification, and anatomical components.
15. Discuss selected bone diseases and common fractures.

THE MUSCULAR SYSTEM:

1. List the characteristics and functions of muscle tissue.
2. Discuss the organization of muscle tissue and its components.
3. Discuss the anatomy of the muscle (cell) fiber and the microscopic anatomy of the muscle cell including the sarcomere as the basic unit of muscle contraction.
4. Discuss the sliding filament theory of muscle contraction.
5. Discuss the structure and function of the neuromuscular junction.
6. Describe the movement of the action potential in skeletal muscle.
7. Describe the ATP needs and the energy sources used by skeletal muscle.
8. Explain concepts in muscle physiology such as twitch, motor unit, tetanus, as well types of muscle fibers and muscle contractions.
9. Define origin and insertion.
10. Describe the relationship between bones and skeletal muscles in producing body movements. Cognitive Knowledge
11. Discuss most body movements as activities of groups of muscles by explaining the roles of the prime movers, synergist, antagonist and fixator.
12. Define the criteria employed in naming skeletal muscles.
13. Identify the principal skeletal muscles in selected regions of the body and their functions. 14. Discuss selected muscle disorders.

THE NERVOUS AND SENSORY SYSTEM:

1. Identify the basic functions of the nervous system in maintaining homeostasis.
2. Describe the components of the central and peripheral divisions.
3. Describe the structure of a neuron.
4. Identify the major supporting cells of neurons in the CNS and PNS.
5. Compare and Contrast structural and functional classifications of neurons.
6. Define a synapse and describe all of the events that occur at the synapse.
7. Describe the action potential, its generation, and transmission of the action potential in the neuron.
8. Discuss concepts in neurophysiology such as EPSP, IPSP, summation, all-or-none law, and neuron regeneration.
9. Discuss common neurotransmitters.
10. Describe the layers of meninges and longitudinal anatomy of the spinal cord.
11. Describe cross sectional anatomy of the spinal cord including the location of sensory and motor neurons.
12. Identify major sensory and motor tracts in the spinal cord.
13. Describe the basic components of a reflex arc and discuss the patellar, Golgi tendon, stretch, and withdrawal reflexes.
14. Identify the major plexuses in the spinal cord as well as major spinal nerves and their functions.
15. Discuss the immediate and long-range effects of spinal cord injury.
16. Identify the principal parts of the brain.
17. Explain the function of the cerebrospinal fluid, its composition, and the pathway of CSF flow.
18. Describe the blood supply to the brain and the blood-brain barrier.
19. Identify the major structural and functional areas of the cerebral cortex and cerebrum including the basal nuclei.
20. Identify the parts of the diencephalon and explain their roles in homeostasis.
21. Identify the three major components of the brain stem, their substructures and functions.
22. Discuss the structure and function of the cerebellum.
23. Discuss common disorders of the central nervous system.
24. Identify the twelve pairs of cranial nerves by name, number function and classify as sensory, motor or mixed.
25. Identify the major nerves of the brachial plexus.
26. Identify the major nerves of the lumbosacral plexus.
27. Describe exteroceptors, interoceptors, and proprioceptors.
28. Compare the structure and functional differences between the somatic efferent and autonomic portions of the nervous system.
29. Compare and Contrast the structure and function of the parasympathetic and sympathetic nervous systems and their specific effects on end organs.
30. Discuss acetylcholine (cholinergic) and norepinephrine (adrenergic) as the major neurotransmitters in the ANS.
31. Discuss olfactory sensations and receptors.
32. Discuss gustatory sensations and receptors.
33. Describe external and internal anatomy of the eye.
34. Discuss the visual pathway and common errors of refraction.
35. List the major structures and functions of the external ear, middle ear and internal ear.
36 Discuss selected disorders of the special senses.

GENERAL EDUCATION CORE COMPETENCIES (GCC)

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.

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.

STUDENT RESPONSIBILITIES/REQUIREMENTS

In order to be successful in this class, each student should study a minimum of 2 hours per day. Before arriving to class, the student should come to class prepared by reading the assigned chapters, learning the bold faced vocabulary terms for each assigned chapter, and answering the study questions for each chapter. Failure to comply with these suggestions will make it impossible to understand the lecture material and will result in unsuccessfulness in the course. This course contains a lot of information and you must keep up on a daily basis.

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 their cell phone or any other personal communication device during the test will be considered cheating and be given a zero for the test. This includes taking a phone out after the student has completed an exam but other students are still testing.

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

No EATING/DRINKING IS ALLOWED IN LAB OR CLASSROOMS!!!

STC ATTENDANCE PROCEDURE:

It is essential that educational programs maintain requirements and standards necessary for successful employment of its graduates in business and industry. In view of the intensive nature of the educational programs, it is necessary for every student to be present and on time every day for all classes.

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. All 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 as noted on each syllabus will receive a "W" for the course if removed from the course on or before midterm.

Definitions

Scheduled Instructional Time

Scheduled instructional time is explained by the instructor during the course orientation as listed on the course syllabus. The scheduled time will be maintained until all work is completed or until the end of the course.

Tardy or Early Departure
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 involved.

Traditional Attendance Addendum: For this class which meets 1 day a week for 15 weeks the maximum number of days a student may miss is 2 day during the semester.*

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.

Special Needs: Students with documented special needs may be provided with an individualized Instructional Plan with specifications for scheduled instructional time. It is the student's responsibility to inform the ADA Coordinator as students and instructors are required to have documented evidence prior to receiving or allowing special accommodations. See STC Catalog and Student Handbook, Student Affairs section for further information regarding special needs.

Special Needs Addendum: 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.

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 entire policy/procedures will be discussed with you by the instructor. 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.

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. 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. (*NOTE: There will be no make-up opportunity for missed **lab** exams)*

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 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.**

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: For information regarding Angel, the Information Delivery System (IDS), Student Owl Mail, and BannerWeb, please see the IT Department link on STC's website at http://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.) …… .x0.60 = _____
(Learning Objective Assignments).x 0.05 = +_____
(Group Presentation).....x 0.05 = +_____
(Comprehensive Final)……....x 0.30 = +_____

GRADING COMPONENTS:

Chapter Tests	60%
Learning Objective Assignments	5%
Group Presentation	5%
Comprehensive Final Exam	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.

***COURSE COMPETENCY AREAS (CC):**

1. Body Organization
2. Cell Structure and Function
3. Tissue Classifications
4. The Integumentary System
5. The Skeletal System
6. The Muscular System
7. The Nervous and Sensory Systems

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BIOL 2113 Lecture Lesson Plan (Monday PM)
Subject to change at the Instructors discretion

Date	Lecture Chapter(s) & Content	Tests (Chapters)	Competency Area
8/17	Intro to Course, Syllabus, Outline, Regulation, etc. Chapter 1: Intro. to the Human Body	• Read Chapters before coming to Lecture and complete Learning Objectives (**on M Drive**). **Due each lab day & place in lab report.**	*CC 1,2,3 **GCC a-d
8/24	Chapter 2: The Chemical level of Organization Chapter 3: The Cellular Level of Organization		*CC 1,2,3 **GCC a-d
8/31	**Lecture Test # 1** Chapter 4: Tissue Level of Organization	**Lecture Test #1 (Ch: 1-2)**	*CC 1-5 **GCC a-d
9/14	**Lecture Test # 2** Chapter 5: The Integumentary System Chapter 6: Skeletal System: Bone Tissue	**Lecture Test #2 (Ch: 3–4)**	*CC 1-5 **GCC a-d
9/21	**LAB Test #1** Chapter 7: Skeletal System: Axial Chapter 8: Skeletal System: Appendicular	**LAB Test #1 (Ch: 1,2,3,4,5,)**	*CC 5 **GCC a-d
9/28	**Lecture Test # 3** Chapter 9: Joints Chapter 10**:** Muscle Tissue	**Lecture Test #3 (Ch: 5-6)**	*CC 5 **GCC a-d
10/5	**Lecture Test # 4** Chapter 11: Muscular System Chapter 12: Nervous Tissue	**Lecture Test #4 (Ch: 7–8)**	*CC 5,6 **GCC a-d
10/12	**LAB Test #2** Chapter 13: Spinal Cord and Nerves	**LAB Test #2 (Ch: 6,7,8,9)**	*CC 5,6 **GCC a-d
10/19	**Lecture Test # 5** Chapter 14: Brain and Cranial Nerves	**Lecture Test #5 (Ch: 9 – 10)**	*CC 6,7 **GCC a-d
10/26	**Lecture Test # 6** Chapter 15: Autonomic Nervous System Chapter 16: Sensory, Motor, and Integrative.	**Lecture Test #6 (Ch: 11-12)**	*CC 7 **GCC a-d
11/2	**LAB Test #3** Chapter 17: The Special Senses	**LAB Test #3 (Ch: 10,11,12)**	*CC 7 **GCC a-d
11/9	**Lecture Test # 7** Group work/Assignment	**Lecture Test #7 (Ch: 13-14)**	*CC 7 **GCC a-d
11/16	**Lecture Test # 8** Group Work/Assignment	**Lecture Test #8 (Ch: 15-16)**	*CC 7 **GCC a-d
11/23	**LAB Test #4** **Final Exams prep. (lab and lecture)**	**LAB Test #4 (Ch:13,14,17)–not 15,16**	*CC 5-7 **GCC a-d
11/30	**Research Assignment – see M drive**		*CC 1-7 **GCC a-d
12/7	***FINALS-LAB & LECTURE***	***Comprehensive: all chapters***	*CC 1-7 **GCC a-d

*CC= Course Competency/ **GCC= General Core Education Competency

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1 Body Organization
2 Cell Structure and Function
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