



BIOLOGY (BIOL) 2114: Anatomy and Physiology II

COURSE SYLLABUS

Lecture Monday Spring Semester 2018

COURSE INFORMATION

Credit Hours/Minutes: 3/2250
Class Location: 8136
Class Meets: Monday 2:00 – 4:30pm
Course Reference Number (CRN): 40100

INSTRUCTOR CONTACT INFORMATION

Instructor Name: Erica M. Harrison
Office Location: Health Science Annex (HSA) 901 (Vidalia), 8145 (Swainsboro)
Office Hours: Monday/Wednesday 7:30-10:30am, Tuesday/Thursday 8:30-10:30am (Vidalia)
Email Address: [Erica Harrison eharrison@southeasterntech.edu](mailto:Erica.Harrison@southeasterntech.edu)
Phone: 912-538-3188
Fax Number: 912-538-3156
Tutoring Hours: By appointment only

SOUTHEASTERN TECHNICAL COLLEGE'S (STC) CATALOG AND STUDENT HANDBOOK

Students are responsible for all policies and procedures and all other information included in Southeastern Technical College's [Catalog and Student Handbook](http://www.southeasterntech.edu/student-affairs/catalog-handbook.php) (<http://www.southeasterntech.edu/student-affairs/catalog-handbook.php>).

REQUIRED TEXT

1. Principles of Anatomy and Physiology, Tortora and Derrickson, 14th edition, Wiley
2. Southeastern Technical College 2113 Lab Manual, Ajohda, 1st edition

REQUIRED SUPPLIES AND SOFTWARE

Ink pens, highlighters, and any other supplies deemed necessary by the instructor.

COURSE DESCRIPTION

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. 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

PREREQUISITE(S)

BIOL 2113: Anatomy and Physiology

BIOL 2113L: Anatomy and Physiology Lab I

Co-requisites: Required

BIOL 2114L - Anatomy and Physiology Lab II

COURSE OUTLINE

THE ENDOCRINE SYSTEM

1. Discuss the functions of the endocrine system in maintaining homeostasis.
2. Contrast the endocrine and nervous systems.
3. Explain the general mechanisms by which hormones work.
4. Discuss the control of endocrine organs.
5. Describe the role of the hypothalamus in endocrine control.
6. Describe the location, hormones, and functions of the following endocrine glands: pituitary, thyroid, parathyroid, adrenal, pancreas, ovaries, testes, pineal, and thymus.
7. Describe endocrine disorders of hyposecretion and hypersecretion.

THE CARDIOVASCULAR SYSTEM

1. Describe the anatomy of the heart and heart wall.
2. Describe the flow of blood through the heart including the pulmonary and systemic circuits.
3. Explain the structural and functional features of the conduction system of the heart and electrocardiogram (EKG) tracings.
4. Describe the principal events of the cardiac cycle.
5. Contrast the sounds of the heart and their clinical significance.
6. Calculate cardiac output and discuss factors that affect it.
7. List the risk factors involved in heart disease.
8. Contrast the structure and function of the various types of blood vessels.
9. Explain how the venous blood is returned to the heart.
10. Explain blood pressure and pulse.
11. Discuss the factors that affect blood pressure.
12. Contrast the clinical significance of systolic, diastolic, and pulse pressure.
13. Discuss the mechanism of capillary exchange.
14. Describe blood flow through systemic and pulmonary circuits. Identify the principal arteries and veins of the systemic, pulmonary, and hepatic portal circulations.
15. Describe unique aspects of fetal circulation.
16. Explain the effects of exercise on the cardiovascular system.
17. Describe significant cardiovascular diseases including coronary artery disease and congestive heart failure.

THE BLOOD AND LYMPHATIC SYSTEM

1. Discuss the function and physical characteristics of blood, lymph, and interstitial fluid, and the lymphatic system.
2. List the components of plasma and their functions.

3. List the characteristics and functions of formed elements.
4. List the lymphoid cells including lymphocytes (T and B cells), plasma cells, macrophages and reticular cells.
5. Discuss lymphoid organs including lymph nodes, bone marrow, spleen, thymus, tonsils and nodule aggregates.
6. Identify the stages involved in hemostasis.
7. Explain the A, B, and O (ABO) and Rhesus (Rh) factor blood grouping systems.
8. Discuss causes of anemia.
9. Describe selected blood disorders and tests.

THE IMMUNE SYSTEM

1. Discuss the basic properties of immunity
2. Discuss innate and adaptive immunity
3. Explain the process of cellular immunity and the role to T-cells.
4. Explain the process of humoral immunity and the role of B-cells and antibodies
5. Discuss the difference between primary and secondary responses
6. Describe types of active and passive immunity
7. Describe selected immune disorders

THE RESPIRATORY SYSTEM

1. Identify the organs of the respiratory system and describe their functions
2. Contrast internal and external respiration and explain the role of the alveolar-capillary membrane.
3. Describe the events involved in pulmonary ventilation and discuss the significance of pleura
4. Explain the mechanism of oxygen and carbon dioxide transport in the blood
5. Describe the various factors that control the rate of respiration
6. Define selected disorders of the respiratory system

THE DIGESTIVE SYSTEM

1. Identify the organs of the gastrointestinal tract and the accessory organs and their functions in the digestive system
2. Identify the general histological layers of the digestive organs and explain how the layers of modified to accommodate the function of each organ
3. Describe the mechanical movements of the GI tract
4. Identify the major digestive secretions and their functions
5. List the enzymes involved in the breakdown of fats, carbohydrates, and proteins
6. Describe the process of absorption of fats, carbohydrates, and proteins
7. Define the processes involved in the formation of feces and defecation
8. Describe common disorders of the digestive system
9. Discuss carbohydrate, fat, and protein metabolism.
10. Discuss metabolic rate and the role of the liver in metabolism
11. Describe the absorptive and post-absorptive states

THE URINARY SYSTEM

1. Identify the external and internal gross anatomical features of the kidneys
2. Discuss the formation of urine explaining the microscopic anatomy of the nephron and its basic functions of filtration, reabsorption, and secretion
3. Discuss the role of the kidney in maintaining blood pressure and the function of the juxtaglomerular apparatus
4. Explain the role of key hormones on the kidney and their role in water and electrolyte balance
5. Discuss the role of the kidney in homeostasis of pH
6. Discuss the components of urine
7. Discuss the structure and physiology of the ureters, urinary bladder, and urethra
8. Describe disorders of the urinary system

THE REPRODUCTIVE SYSTEM

1. Explain the structure and functions of the male reproductive organs and the pathway of sperm
2. Discuss the processes of spermatogenesis and spermatogenesis in the male
3. Describe the normal composition of semen and the role of the accessory sex glands in the production of semen
4. Discuss the role of hormones in the male reproductive system
5. Explain the structure and functions of the female reproductive organs and the egg/zygote
6. Discuss the process of oogenesis
7. Discuss the principal events of the menstrual and ovarian cycles and explain all hormones involved
8. Discuss the physiology of sexual intercourse
9. Discuss examples of male and female reproductive diseases

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.

STUDENT REQUIREMENTS

In order to be successful in this class, students should study a minimum of 2 hours per credit hour each week (minimum of 8 hours). Before arriving for class, students should read assigned chapters taking special note of bold-faced vocabulary terms and any study questions within the chapter. Failure to comply with these suggestion will make it impossible to understand and follow the lecture material and will result in a student being unsuccessful in this course.

Students are responsible for the policies and procedures in the STC Catalog and Handbook. Additionally, during exams, students are to place all notebooks, bags, and other belongings on the floor or on the counters located in the back and sides of the classroom. Also during examinations students are to be seated with one empty chair between each student. No talking is permitted once the exams are handed out. **Students found with their cellphone or any other personal communication device (including smart watches) will be considered cheating and given a zero for the exam. This includes taking out a phone or similar device after the student has completed the exam but while others in the classroom are still testing.**

Students are expected to exhibit professional behavior at all times. Each student is to show respect and concern for fellow students and for the instructor. Insubordination will not be tolerated, and disciplinary measures will be enacted.

As students taking this course are striving to become healthcare professionals, they will be expected to follow certain healthcare program rules. This includes but is not limited to: proper dress (when in lab setting or other activities in class), no perfumes or strong fragrances, cleanliness (hands, clothes, hair), and effective communication skills.

Per STC policy no cell phones are allowed in hallways or in classrooms. If your phone must be with you it must be turned off and in a bag. In cases of emergency when a student needs his or her phone, he or she is expected to 1) notify the instructor before class begins and 2) leave the phone on silent (NO VIBRATE) while they are in the class (this excludes examination guidelines for phones). No personal calls are to be taken during class, regardless of the situation. This should be handled before or after class.

No eating or drinking is permitted in the lab or lecture classroom. Water is allowed if it is in a spill-proof container and must be kept under the desk or on the sides of the classroom.

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. Three (3) tardies or early departures equals one (1) absence from the course. 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.

Instructors are responsible for determining whether missed work may be made up and the content and dates for makeup work is at the discretion of the instructor (see evaluation procedures and course lesson plan below).

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 one day a week for 16 weeks, the maximum number of days a student may miss is two 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 [Helen Thomas \(hthomas@southeasterntech.edu\)](mailto:hthomas@southeasterntech.edu), 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 [Helen Thomas \(hthomas@southeasterntech.edu\)](mailto:hthomas@southeasterntech.edu), 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" (Withdrawn) is assigned when the student completes the withdrawal form from the course.

Students who are dropped from courses due to attendance (see above for attendance policy) after drop/add and before 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' (Failing 0-59) 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.

EVALUATION PROCEDURES

In order to sit for the final exam in this course a student must maintain a Lecture Exam and Lab Exam average of 70.0 or above prior to the date of the scheduled final exam. Exam averages of 69.9 will not be rounded up. If a student has below a 70.0 average, the student will be given a letter grade based on the exam average. There will be no drop grade for lecture or lab exams.

MAKEUP GUIDELINES

Lecture examinations: Students will be allowed to make up one lecture examination (excluding the final exam), due to a documented, excused absence approved by the instructor. Any subsequently missed lecture exam will result in an automatic zero.

Lab exams: There is no make-up opportunity for lab exams.

Lecture assignments: Late assignments will be accepted but not for full credit. Assignments submitted after the due date will incur a 10% deduction per day late.

Lab assignments: Late assignments will be accepted but not for full credit. Assignments submitted after the due date will incur a 10% deduction per day late.

Laboratory activities and experiments: There will be no make-up opportunity for missed lab activities, in-class assignments, experiments or dissections.

ASSIGNMENTS

Students will be asked to bring a three prong notebook for the submission of learning objectives and lab

assignments. This notebook will stay in the classroom and new material will be added each week including: in-class assignments, completed pre-lab and lab activities, signed policies and procedures and other signature sheets, group project information, and learning objectives for lecture. Students are required to read each chapter and complete learning objectives for each chapter. Learning objectives can be found on the (materials drive) M-Drive. All completed learning objectives should be hand written in blue ink and submitted EACH WEEK in the student's lab notebook.

GROUP PROJECT PRESENTATION

Students will work in small groups and give an educational presentation on a disease of disorder that affects certain body systems related to the chapters covered in this course. A list of topics, guidelines for arrangement, content, requirements, and a rubric can be found on the M-Drive. Presentations should be 15-20 minutes long. Points will be deducted for going under or over the time limits. Students are required some type of visual aid. Informative videos or other media may be used if it will enhance the presentation. These video clips or other media are not to exceed 7 minutes of the presentation.

Group members should have equal participation in the completion of this project. A team rating scale will be provided for students to "grade" each other on the work they have done concerning their project. Additionally, students are encouraged to report team member failure to comply with scheduled meetings, discussions, emails, group texts, etc. Failure to correspond and communicate with group members will result in very different project grades.

The week of the presentations (see course schedule), all presentations are to be submitted to the instructor, saved on the classroom computer's desktop from a jump drive, or downloaded from the web prior to the day of the presentations. Thus, no procrastination will be accepted.

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:

1. 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.

2. Second Offense

Student is given a grade of "WF" (Withdrawn failing) 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.

3. 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 third 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

The Technical College System of Georgia and its constituent Technical Colleges do not discriminate on the basis of race, color, creed, national or ethnic origin, sex, religion, disability, age, political affiliation or belief, genetic information, disabled veteran, veteran of the Vietnam Era, spouse of military member 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).

The following individuals have been designated to handle inquiries regarding the nondiscrimination policies:

American With Disabilities Act (ADA)/Section 504 - Equity- Title IX (Students) – Office of Civil Rights (OCR) Compliance Officer	Title VI - Title IX (Employees) – Equal Employment Opportunity Commission (EEOC) Officer
Helen Thomas, Special Needs Specialist Vidalia Campus 3001 East 1 st Street, Vidalia Office 108 Phone: 912-538-3126 Email: Helen Thomas hthomas@southeasterntech.edu	Blythe Wilcox, Director of Human Resources Vidalia Campus 3001 East 1 st Street, Vidalia Office 138B Phone: 912-538-3147 Email: Blythe Wilcox bwilcox@southeasterntech.edu

ACCESSIBILITY STATEMENT

Southeastern Technical College is committed to making course content accessible to individuals to comply with the requirements of Section 508 of the Rehabilitation Act of Americans with Disabilities Act (ADA). If you find a problem that prevents access, please contact the course instructor.

GRIEVANCE PROCEDURES

Grievance procedures can be found in the Catalog and Handbook located on Southeastern Technical College's website.

ACCESS TO TECHNOLOGY

Students can now access Blackboard, Remote Lab Access, Student Email, Library Databases (Galileo), and BannerWeb via the mySTC portal or by clicking the Current Students link on the [Southeastern Technical College \(STC\) Website \(www.southeasterntech.edu\)](http://www.southeasterntech.edu).

TECHNICAL COLLEGE SYSTEM OF GEORGIA (TCSG) GUARANTEE/WARRANTY STATEMENT

The Technical College System of Georgia guarantees employers 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 POLICY

Assessment/Assignment	Percentage
Lecture Exams	50%
Learning Objectives	10%
Group Presentation	10%
Comprehensive Final	30%

GRADING SCALE

Letter Grade	Range
A	90-100
B	80-89
C	70-79
D	60-69
F	0-59

DISCLAIMER STATEMENT

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 is for planning purposes only.

BIOL 2114: Anatomy and Physiology I

Fall Semester 2017 Lesson Plan

Subject to change at instructor's discretion

Date	Chapter/Lesson	Content	Assignments & Tests Due Dates	Competency Area
01/08	Introduction to course, syllabus review, outline, regulation, etc. Chapter 18 Chapter 19	Chapter 18: The Endocrine System Chapter 19: Cardiovascular System: Blood	Read chapters before coming to class and complete learning objectives (found on the M-Drive). These are due each lab day and placed in the lab report.	C: 1 G: a-c
01/15	Martin Luther King Junior	Holiday	No class	
01/22	Lecture Exam 1 Chapter 20 Chapter 21	Chapter 20: Cardiovascular System: Heart Chapter 21: Cardiovascular System: Blood vessels	Lecture Exam 1: Chapters 18-19	C: 1-3 G: a-c
01/29	Lab Exam 1 Chapter 22	Chapter 22: Lymphatic System	Lab Exam 1: Chapters 18-21	C: 1-4 G: a-c
02/05	Lecture Exam 2 Chapter 23	Chapter 23: Respiratory System	Lecture Exam 2: Chapters 20-21	C: 2-5 G: a-c
02/12	Lecture Exam 3 Chapter 24 Chapter 25	Chapter 24: Digestive System Chapter 25: Metabolism and Nutrition	Lecture Exam 3: Chapters 22-23	C: 3-6 G: a-c
02/19	Lab Exam 2 Chapter 26	Chapter 26 Urinary System Anatomy	Lab Exam 2: Chapters 22-23	C: 3-7 G: a-c
02/26	Lecture Exam 4 Chapter 27	Chapter 27: Fluid and Electrolyte Balance	Lecture Exam 4: Chapters 24-25	C: 6-7 G: a-c
03/05	Lab Exam 3 Chapter 28	Chapter 28: Reproductive System	Lab Exam 3: Chapters 24-25	C: 6-7 G: a-c
03/12	Lecture Exam 5	Research Assignment	Lecture Exam 5: Chapters 26-27	C: 1-7 G: a-c
03/19	Lab Exam 4	Group work: bring laptops to class this night	Lab Exam 4: Chapters 26-28	C: 6-7 G: a-c
03/26	Final group project prep	Group work: bring laptops to class this night		C: 1-8 G: a-c
04/02	Spring Break	Holiday	No class	C: 1-8 G: a-c
04/09	Presentations			C: 1-8 G: a-c
04/16	Final Exam Review	Comprehensive	Chapters 18-28 Research Assignments due	C: 1-8 G: a-c
04/23	Chapters 18-28	Student Study day	No class	C: 1-8 G: a-c
04/25	Final Exams	Comprehensive: Lab and Lecture	Chapters 18-28	C: 1-8 G: a-c

COMPETENCY AREAS (C)

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 CORE EDUCATIONAL COMPETENCIES (G)

- 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.

Group Project Presentation Evaluation

PRESENTATION TOPIC:

GROUP MEMBERS:

GROUP PROJECT PRESENTATION RUBRIC

Students must adhere to rubric to outline presentation

Section/Points Possible	Criteria	Comments	Points Earned
Introduction/Background 20 points possible	Topic was introduced with factual information about its discovery, pathology, and prevalence.		
Diagnosis and Treatment 20 points possible	Adequate information was provided concerning symptoms, diagnosis, treatment and risk factors of treatment.		
Ongoing Research 20 points possible	Current efforts to improve prevention methods, diagnosis and treatments was adequately summarized.		
Group Participation 20 points possible	All group members had equal participation which includes but is not limited to: in and out of class meeting attendance, timely correspondence and communication, and provision of pertinent information on assigned portions of project.		
Overall Presentation Quality 20 points possible	The preparation, delivery, use of visual aids and video clips were classroom appropriate, interesting, and informative. The presentation met the time limits for the assignment. Students followed instructions for the organization of the presentation.		