Suffolk County Community College
Sayville Center
Biology Department
http://department.sunysuffolk.edu/Biology_A/index.asp

COURSE OUTLINE

COURSE TITLE: Anatomy and Physiology I - (BIO130)

INSTRUCTOR: Staff

SEMESTER: Fall 2016

REQUIRED BOOKS: *Pick only 1 of the following 2 choices:*

1. LSC Suffolk CCC Selden (Connect for Anatomy & Physiology 180 days), 7th Ed.
   Kenneth S. Saladin, McGraw-Hill (formerly Primis)
   ISBN: 9781259976735

OR

2. LSC (Suffolk CCC Selden) (w/360 day access), 7th Ed.
   Kenneth S. Saladin, McGraw-Hill
   ISBN: 9781259976728

REQUIRED LABORATORY MANUAL:

Introduction to Human Anatomy and Physiology Laboratory Manual
ISBN: 978-0-7380-7399-6

RELATED READINGS:

Introduction to Chemistry for Biology Students, 9th Ed., George I. Sackheim,
Pearson/Benjamin Cummings, San Francisco, CA.

Basic Chemistry for Biology, 2nd Ed., Carolyn Chapman, WCB/McGraw-Hill,
Dubuque, IA, 1999

Study Guide to Accompany Human Anatomy and Physiology, 7th Ed.,

The Anatomy Coloring Book, 3rd Ed., Wynn Kapit and Lawrence M. Elson,

The Physiology Coloring Book, 2nd Ed., Wynn Kapit, Robert I. Macey and
Esmail Meisami, Benjamin/Cummings, Menlo Park, CA, 2000

Coloring Guide to Anatomy & Physiology, Judith A. Stone and Robert J. Stone,
Wm. C. Brown Publishers, Dubuque, IA, 1995
RELATED READINGS:  

REQUIRED MATERIALS:  
Gloves (disposable, vinyl/latex)

COURSE OBJECTIVES:  
The design of this course will enable students to:

1. use (follow, understand and apply) the scientific method,  
a. by designing experiments to test formulated hypotheses,  
b. by solving problems with the correct use of appropriate scientific notation and equipment,  
c. by quantifying (observing, describing and measuring) various empirical phenomena,  
d. and by logically reaching valid conclusions based on these data through critical analysis and interpretation.

2. describe how the basic structure of inorganic elements is energetically organized through chemical bonding into organic compounds,  
a. that constitute the anatomy of the human body,  
b. and that determine the physiology of its organ systems in the maintenance of homeostasis through negative feedback mechanisms.

3. select, apply and use appropriate mathematical functions correctly in solving various physical, chemical and biological problems.

4. explain the relationship between structure and function at each level of organization of the body commencing with the cell and culminating with the total organism.

5. identify, locate and classify various anatomical structures at the cellular, histological, organal and systemic levels of organization.

6. describe and explain selected physiological processes at the cellular, histological, organal and systemic levels of organization.

7. use and understand correct and appropriate anatomical and directional terminology and descriptions as well as scientific terminology in general.

8. identify and explain how selected pathologic conditions apply to the normal functions of the topic being studied.

Student will have opportunities to demonstrate the acquisition of these objectives on written and practical examinations and through discussion and reports.
COURSE PROCEDURE:

There will be 3 hours of lecture and 3 hours of laboratory per week. A standard lecture format will be generally utilized with the inclusion of audio-visual material (transparencies, films, slides, tapes, etc.), guest lecturers and field trips where appropriate. A familiarity with the library will be required. Additional readings, term papers or projects may be assigned.

COURSE REQUIREMENTS:

I. ATTENDANCE:

A. Lecture: All students are expected to attend every session of each course for which they are registered. Students are responsible for all that transpires in class whether or not they are in attendance. The College defines excessive absence or lateness as more than the equivalent of one week of class meetings during the semester. Excessive absence or lateness may lead to failure in a course or removal from the class roster.

B. Laboratory: Students must attend all laboratory sessions. A student who misses a session must contact the laboratory instructor before the next laboratory meeting to make up missed work. Failure to comply with this policy will result in being dropped from this course.

II. EXAMINATIONS AND GRADING:

A. Lecture: A minimum of 3 class examinations will be given. At the instructor's discretion, additional examinations and quizzes may be administered. The final examination will be a standardized departmental comprehensive examination. (Any "make-up" policy will be announced by your instructor.) The final examination, in combination with the other lecture grades, will constitute approximately 2/3rds of the final course grade.

B. Laboratory: A minimum of 2 laboratory examinations will be given. Completion of these examinations is mandatory. Along with these scheduled examinations, your instructor may require quizzes, problems, laboratory reports, homework, etc. These laboratory grades will be combined to total approximately 1/3rd of your final course grade.

COURSE COLLEGIALITY:

In order to allow the pursuit of knowledge to its fullest, without unnecessary distractions and to maintain common courtesy to others, every student

1. should refrain from bringing food and drink to the classroom for the purpose of consuming them during the lecture and/or laboratory as College policy forbids doing so, and

2. should refrain from bringing beepers and cellular phones to the classroom, unless they have been turned OFF. In the event that a beeper or cellular phone interrupts the class proceedings, the student should immediately leave the room.
LECTURE OUTLINE

I. Homeostasis

II. Biochemical Molecules
   A. Water
   B. Electrolytes
   C. Carbohydrates
   D. Lipids
   E. Proteins
   F. Nucleic Acids

III. The Cell
   A. Cellular Membranes
   B. Cellular Organelles
   C. Transport Mechanisms
      1. Passive Transport
      2. Active Transport
   D. Transmembrane Potential
   E. Cell Cycle
      1. Replication
      2. Transcription
      3. Translation
      4. Mitosis
   F. Cellular Respiration
      1. Glycolysis
      2. Citric Acid Cycle
      3. Electron Transport System

IV. Tissues

V. Integument (Skin)

VI. The Skeleton
   A. Bone Structure
   B. Bone Development
   C. Articulation
   D. Lever Systems

VII. Neuromuscular Membrane Physiology
   A. Excitatory/Action Potential
   B. Membrane Conduction
   C. Synapse/Neuromuscular Junction

VIII. Skeletal Muscles
   A. Structure
   B. Sarcomere Contraction
   C. Twitch

IX. Nervous System
   A. Reflexes
   B. Brain and Spinal Cord
   C. Autonomic Nervous System
   D. Special Senses