NORTHERN ESSEX COMMUNITY COLLEGE
HAVERHILL, MASSACHUSETTS

COURSE OUTLINE
Winter/Spring 2017

COURSE: *BIO121 LLS (CRN 1290), Anatomy and Physiology I*

INSTRUCTOR: *Professor Noel Ways*

TEXTS: *Human Anatomy and Physiology, by Erin C. Amerman ; Pearson Publishing Co. © 2016 ISBN: 9780134042336*

Exploring Anatomy & Physiology in Laboratory (Loose Pgs), by Erin C. Amerman; Morton Publishing Company © 2013

ADDITIONAL SUPPLIES: highlighters, recorder, 1.5" ring binder, safety eyewear

LOCATION and TIME: *Lecture/Lab: L015 Sat 8:00 - 12:10*

COLLEGE COURSE DESCRIPTION:

BIO 121 – Anatomy & Physiology I
The basic principles of chemistry are reviewed and the basic principles of biology are introduced. These are followed by an introduction to the study of the structure and functioning of the human body. Systems covered are integumentary, skeletal, muscular and nervous. Emphasis will be placed on the interrelationships among the systems. Related topics such as diseases of the systems will be integrated where applicable. Laboratory work will include experiments, dissection, microscope work, and the study of charts and models. Please note: Prerequisites are BIO 115 Physiological Chemistry or CHM 111 Introduction to Chemistry or higher or high school chemistry in the past five years.
4.000 Credit Hours 3.000 Lecture hours 2.000 Lab hours
Prerequisites: College Reading Proficiency (see: https://niobe.necc.mass.edu/proficiencies.htm)

INSTRUCTIONAL OBJECTIVES/OUTCOMES:

The primary objective of Human Anatomy and Physiology I is to build a foundational understanding of the human body for students pursuing a career in

the medical and paramedical curricula or other related fields. The following is a listing that describes many of the details of this objective. This listing is partial and provides a broad overview of the course and includes those objectives deemed mandatory by the Department of Natural Science.

1. *Students will describe and use anatomical terminology applicable to writing of medical reports and reading of professional literature associated with their discipline.*
2. *Students will be able to identify all major body systems with their essential functions, particularly as they relate to homeostatic maintenance.*
3. *Students will be asked to describe the homeostatic paradigm, and provide and example of both positive and negative feedback systems.*
4. *Each student will be exposed to essential chemical principles necessary for further discussion of physiological concepts in both A&P I and A&P II.*
5. *Students will know structural/functional relationships of major cellular organelles. Cell membrane structural and physiological functions will also be understood.*
6. *Each student will recognize major tissue classifications found in the body and equate to each appropriate function-location relationships.*
7. *The student will identify major components of the Integumentary System and their functions. The students will also explain the relationship of the integument to thermoregulation. The student will understand the process of deep wound healing while taking into account the logical progression of healing events through time.*
8. *The student will be able to describe the structural makeup of osseous tissue and explain why the system exists. Key homeostatic mechanisms involved in the maintenance of normal blood calcium levels will be explained and illustrated. Lastly, the process of bone growth will be understood in detail, and how hormonal regulation affects the overall process.*
9. *The student will then be required to identify both name and function of most bones of the body as well as numerous processes, fosses, etc. of the same.*
10. *The student will then focus on articulations and be able to identify the various joint classifications, identify essential range of movements, and lastly understand the basic anatomy of the synovial joint.*
11. *Following this the student will take a close look at how energy, in the form of ATP is produced in cellular respiration. The entire essential metabolic pathway will be examined and the student will be expected to identify all critical actions and processes for these metabolic pathways.*
12. *The next unit will revolve around muscle tissue and the muscular system. Here, the students will be able to recognize essential anatomy of muscle tissue and their associated physiology. The student will gain a detailed understanding of the sliding filament theory. Finally, the student will be able to discuss the energetics involved in muscle contraction.*
13. *The student will be able to identify select muscle groups as well as their origins*

and insertions and the specific action of each muscle.

14. *The final unit of study will be an examination of the nervous system. Here the student will recognize nervous tissue types and be able to identify their respective functions. The students will also demonstrate a clear understanding of nerve impulse propagation.*
15. *Following nervous tissue, the students will look at the function of the spinal cord with particular emphasis on spinal reflexes. The student will be able to illustrate select reflexes and appropriately label them.*
16. *The student will then be required to identify the basic parts of the human brain and their respective functions. But beyond this, the student will be able to explain how the different parts work in a coordinated manor.*
17. *Student will describe the anatomical characteristics of the eye and ear and the basic functions of major anatomical parts.*
18. *Lastly, the student will have a basic understanding of the autonomic nervous system and how each branch effects the viscera, with particular emphasis on the "fight and flight response" vs. maintenance of homeostasis.*

TEACHING PROCEDURES:

The lecture sequence will be presented in a systematic fashion with accompanying visual support to facilitate organization and understanding of the lecture material. Lecture outlines and other course materials are provided on-line and are to be brought to each class to facilitate integration of content presented.

The laboratory is designed to give the student a "hands on" appreciation for the anatomical considerations being discussed in lecture and to familiarize the student with some of the more basic physiological considerations as they relate to gross anatomy. The laboratory period will also be used for lecture purposes.

GRADING POLICY

The course content is divided up maximally so as to reduce total load content on any particular exam. Each exam is worth 100 points. The "lowest" grade may be dropped with the exception of the last exam set and potentially other exams that are "non-droppable". The student will be informed ahead of time if an exam cannot be dropped. The final grade is based upon an absolute scale and is determined by the college and can be accessed on-line. A number/letter equivalence chart is provided at the end of this syllabus.

ATTENDANCE POLICY:

Attending every lecture and every lab is strongly encouraged, as material will be presented that may not be otherwise covered in the text. A student will not be penalized for failure to attend a class; however, it should be noted that lecture exams and laboratory practicals will have strong representation from class instruction. A name call will be taken for registrar tracking purposes.

Announcements, changes to the schedule or exam dates, etc. may be given at the very beginning of class or at the very end of class. Never leave class early. Always be on time. But should you miss any portion of the lecture (beginning, end, or otherwise) you must be proactive to ascertain what you have missed, and any and all changed.

COLLEGE STATEMENTS:

- ***Evaluation of Student Work*** *"Northern Essex Community College's commitment to student success involves the evaluation of student work to help ensure that students are achieving the learning outcomes identified by our programs and the college. This process may involve the collection of student classroom products for evaluation at the program, department, and/or college levels. When collected for this purpose, students' names will be removed from the products so that the assessing is done anonymously. Evaluations carried out at the program, department, and/or college levels will not impact students' course grades. The process of assigning grades will continue to be the responsibility of the course instructor."*

- ***Learning Accommodations***

  Learning Accommodations Center:

  Serving students with documented disabilities such as: learning disabilities, attention deficit disorders, autism spectrum disorders, brain injuries, chronic illness, low vision/blink, physical disabilities, psychiatric disabilities, and seizure disorders.

  Location: Student Center SC111, call (978) 556-3654
  Or email: lacenter@necc.mass.edu

  Deaf and Hard of Hearing Services:

  Location: Student Center SC110, call (978) 241-7045 (VP?Voice)
  Or email: deafrservices@necc.mass.edu

NOTES "the fine print"

1. *Administrative*
   a. ***The Syllabus*** *Please keep a copy of this syllabus as a record of course content for future application purposes.*

2. *Recording of lectures*
   a. *Recording of Lectures Recording of the lectures is always permitted. The use of lap-top computers or word processors is encouraged if it helps the student integrate the material. Feel free to use a digital camera to photograph laboratory dissections, models, or any other supportive tool. You may videotape the lecture if you like. In short, you may do anything you deem necessary to master the subject matter as long as it is legal, ethical, and non-disruptive.*
3. *Attendance*
   a. ***Attendance*** *of every lecture and every lab is strongly encouraged, as material will be presented that may not be otherwise covered in the text. Also, as special assignments or lecture sequence modifications or exam date changes may occur; it is imperative that you are proactive in ascertaining if changes have been made and what material has been covered.*
   b. ***Tardiness*** *Please be on time. Tardiness is disruptive to both the students and the instructor. If you are late, please make sure that you are marked down on the attendance sheet before you leave. Further, announcements, schedule changes, exam date changes etc, may be given at the very beginning of class.*
   c. ***Leaving Early*** *- Never leave class early as lecture topics could be discussed that are not anticipated or special announcements or schedule modifications may be made at the very end of class.*
4. *Course Materials/Services*
   a. ***Alternative Textbook*** *If the student chooses to use an alternative textbook, or an edition other than the one required for this course, it is the students responsibility to obtain information that is either not covered or otherwise not approached in similar manner as in the required text.*
   b. ***Textbook Usage*** *The role of the textbook is to be a supportive tool to the lectures. The student is not expected to memorize the entire textbook, but to use it to reinforce concepts and material presented during lecture.*
   c. ***Web Site*** *The web site associated for this course can be found at*

the following address: www.noelways.com . Once the site is accessed, select your course and there you will find your lecture outlines, handouts, and other support material. There is also an email button for correspondence with your instructor.

d. ***Lecture Outlines and Supplemental Materials*** *are to be found on the internet. All course materials should be downloaded and organized in a three ring binder during the first week of classes.*

e. ***Tutoring*** *The college provides free tutoring services during Fall and Spring semesters. Contact the academic support center for the days and times. Tutoring is a free service of the college and designed to assist students who desire to excel in their mastery of the material as well as those struggling.*

5 ***Exams***

a. ***The Exam Schedule*** *below is a tentative but probable schedule of topics and dates. The schedule will be modified according to the progress of the lectures. The exam dates are target dates and will represent only material actually covered in class and video assignments. Specifics regarding content will be given as the exam date approaches.*

b. ***Exam Filing*** *All exams are returned to the instructor and filed after being handed back for review.*

c. ***Make-up Lecture Exams*** *are to be avoided! But if a make-up is needed, documentation is required to certify that the need is legitimate. If documentation is not presented, a make-up is still permitted, but a penalty is applied at the discretion of the instructor. If there is to be a make-up, this task should be accomplished within a week that the student returns to school in good health. Dates and times are limited, so the students may need to make special arraignments to do the make-up. Contact me so that a time and date can be coordinated. After a week, the instructor reserves the right to refuse a make-up.*

d. ***Make-up Lab Exams*** *Lab exams (practicals) are very difficult to make up. If you miss a lab practical, this may be the exam grade you drop.*

6 ***Grading***

a. ***Dropping One Exam*** *The lowest grade of the semester is dropped, with exception of the last exam set and any other exams that the instructor designates as "non-droppable".*

b. ***Final Grade*** *Your final course grade is typically determined the day of the final exam. Once the grades are submitted, confirm your grade with the*

college, and contact me if there are any issues. After four weeks of the grades being submitted, exams are recycled, and grades are final.

c. ***Exam Grades*** *are not given over the internet.*

7 ***School Closings and Emergencies***

a. ***Unscheduled School Cancellations*** *If there is a college cancellation, please check the announcements button on the web for instruction. Class time missed due to unscheduled school cancellations must be made up. Follow instructions on the web for details. If there is a scheduled exam, this will be covered the next time we meet.*

b. *Adverse Weather Phone number: ext. 3002*

8 ***Final Points***

a. ***Contact Information*** *See email address for contact link. When emailing, always identify yourself and the class that you are in. Always have the subject line appropriately filled in. I will not open mail that is not properly identified.*

b. ***Recommendations*** *Should you seek a letter of recommendation to future programs, please provide the instructor with appropriate information and deadlines that you are facing and a stamped and addressed envelope. Finally, to assure that your application is complete, please contact the school after a reasonable period of time to assure their having received the letter. Contact me if there are any problems.*

c. ***Identification*** *of all texts, recorders, and lab manuals is important. Please put you name and phone number on all personal belongings. If you leave something behind, you may be contacted as to where to pick it up.*

d. ***Cellular Phones and Text Messaging*** *- Unless you anticipate an emergency call, please turn your phones off. Text messaging is prohibited during class.*

9 ***Laboratory***

a. ***Food and Drinks*** *are never permitted in the lab due to contamination potentials. Eating is prohibited in the lab.*

b. ***Safety Eyewear*** *must be used during dissection exercises. Acceptable eyeware must have a rating of "Z87.1".*

c. ***Clothing in Lab*** *Students are advised to never wear valuable clothing to lab as laboratory procedures may result in permanent damage to clothing.*

d. ***Children*** *Due to safety concerns, children are never permitted in the lab.*

Winter/Spring Schedule

This schedule is tentative and will be adjusted according to the progress of the lectures.

Day of	LECTURE	
January 21	Organization of the Human Body	--
January 28	Chemistry of Life	Exam 1
February 4	Cytology	Exam 2
February 11	Histology	Exam 3
February 18	Histology, cont,. The Integumentary System February 15 (M) College Closed - President's Day	--
February 25	Skeletal Tissue, Axial Skeletal Sys	Exam 4
March 4	Axial and Appendicular Skeletal Sys	Lab Prac #1
March 11	Axial and Appendicular Skeletal Sys	Exam 5
March 18	Spring Break – No Classes March 12 - 19	--
March 25	Cellular Respiration	Exam 6
April 1	Myology	Lab Prac #2
April 8	Articulations	Exam 7
April 15	Muscular System	Exam 8
April 22	Nervous Tissue	Lab Prac #3
April 29	Spinal Cord, Brain, Auto NS	Exam 10
May 6	Brain, Auto NS, cont.; Special Senses	Exam 10
May 13	**Final Exam**	

Anatomy and Physiology I Exam Contents

(Modification of content, dates, or number of exams will be announced in class, should any be made. Exams may not be given in the order designated on the schedule.)

Exam #	*Grade*	*Exam Title*
Exam #1:	_____	_____
Exam #2:	_____	_____
Exam #3:	_____	_____
Exam #4:	_____	_____
Exam #5:	_____	_____
Lab Prac #1:	_____	_____
Exam #6:	_____	_____
Lab Prac #2:	_____	_____
Exam #7:	_____	_____
Exam #8:	_____	_____
Exam #9:	_____	_____
Lab Prac #3:	_____	_____
Exam #10:	_____	_____
Exam #11:	_____	_____

Course Average: _____

Letter Grade: _____

Calculation of your grade is simple. Drop your lowest grade, then do a simple average. This is your course grade to date. Note your grade in the numeric/letter equivalence chart below.

Grading Policy:

A	4.0	93-100	C	2.0	73-76
A-	3.7	90-92	C-	1.7	70-72
B+	3.3	87-89	D+	1.3	67-69
B	3.0	83-86	D	1.0	60-66
B-	2.7	80-82	F	0.0	0-59
C+	2.3	77-79			

Exam Taking Rules

Here is a set of Rules regarding taking exams:

Things you may NOT do:

- Look at another students exam
- Go to the bathroom
- Have any electronic devices in hand/lap or in operation
- Nothing may be on desk - water bottles, papers, hats ETC.
- After an exam is complete, if you leave the room, do not reenter until the rest of the class is finished
- If a key of the exam is posted, this may not be photographed
- Cheat (Dah !!)

Things you may do:

- Put down the correct answers
- Hold it, until the exam is over.
- Look at your own exam
- Look at me (I'll smile)

What if you:

- Look at another students exam: Exam is dropped / 0
- Go to the bathroom during exam: Exam is dropped / 0
- Have electronic devices in hand/lap (even if they are off): Exam is dropped / 0
- Have on desk water bottles, papers, hats ETC: Exam is dropped / 0
- Cheat: Exam is dropped / 0

Exams are "open brain" not "open book": STUDY HARD ! ! !

Students who study hard and know the material well, often enjoy the exams - a reward and confirmation of hard work, and a job well done.