*NORTHERN ESSEX COMMUNITY COLLEGE*
*HAVERHILL, MASSACHUSETTS*

*COURSE OUTLINE*
*Summer 2019*

*COURSE:* *BIO121 LZ (CRN 5110), Anatomy and Physiology I*

*INSTRUCTOR:* *Professor Noel Ways*

*TEXTS:* *HUMAN A & P (Loose Pgs)(w/ModMastering A&P (without Access) ; by Amerman; Pearson Pub. Co., © 2019*

*Exploring Anatomy & Physiology in Laboratory (Loose Pgs) Edition: 3erd; by Amerman; Morton Pub. Co., © 2019*

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

*LOCATION and TIME:* *Lecture & Lab: LA002/LA109 Tues/Thurs 5:00 – 10:25*

*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*

*ABOUT A SUMMER COURSE IN HUMAN ANATOMY AND PHYSIOLOGY:*

*Anatomy and Physiology I is designed to for a typical semester, not a summer session. Therefore, students opting to take this course during the summer must understand that this unabridged course is accelerated; and that no part of the curricula is deleted. With this in mind, substantial study time must be budgeted on a daily basis toward the mastery of the material.*

*INSTRUCTIONAL OBJECTIVES:*

*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.*

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. Students will be exposed to and view stages of mitosis under microscope.*
6. *Each student will recognize about twelve different tissues 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 associated homeostatic control mechanisms. The student will explain in writing 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 explained in writing, and how growth hormone 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 types of joints, identify essential range of movements, and lastly understand the basic anatomy of the synovial joint.*
11. *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.*
12. *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.*

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 in writing his/her understanding and explanation 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 overheads 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 information integration.*

*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 does not figure in to the course average. However, if all exams are taken, a minimum*

*course average of 60 will be assigned should the student average be below 60.*

*ATTENDANCE POLICY:*

*Attendance of 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.*

*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*
   c. ***Scheduled School Cancellations*** *Assignment over mid-semester break will be detailed as we approach that time.*

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 eye ware must have a rating of "Z87.1".*
   c. ***Children*** *Due to safety concerns, children are never permitted in the lab.*

## *Summer, 2018 Schedule*

*This schedule is tentative and will be adjusted according to the progress of the lecture sequence. Please also be aware that this course is accelerated and unabridged, and therefore significant daily study time is mandatory for mastery of the material. Lastly, due to the accelerated nature of the course, exams are frequent.*

| *Day* | *LECTURE* | |
|---|---|---|
| *May 14* | *Organization of the Human Body* | *--* |
| *May 16* | *Chemistry of Life* | *Exam #1* |
| *May 21* | *Cytology* | *Exam #2* |
| *May 23* | *Histology* | *Exam #3* |
| *May 28* | *Integumentary System / Skeletal Tissue* | *Exam #4* |
| *May 30* | *Axial Skeletal System* | *Exam #5* |
| *June 4* | *Appendicular Skeletal System* | *Exam #6* |
| *June 5* | *Energetics, Cellular Respiration / Articulations* | *Lab Practical #1* |
| *June 11* | *Myology* | *Exam #7* |
| *June 13* | *Nervous Tissue / Spinal Cord* | *Lab Practical #2* |
| *June 18* | *Brain / Autonomic NS* | *Exam #8* |
| *June 20* | *Final EXAM Day* | *Exam #9* |

## 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 below.)

| | | |
|---|---|---|
| Exam #1: | _____ | Introduction |
| Exam #2: | _____ | Chemistry of Life |
| Exam #3: | _____ | Cytology |
| Exam #4: | _____ | Histology |
| Exam #5: | _____ | Integumentary System |
| Lab Prac #1: | _____ | Tissues |
| Exam #6: | _____ | Skeletal Tissue |
| Lab Prac #2: | _____ | Skeletal System |
| Exam #7: | _____ | Articulations |
| Exam #8: | _____ | Myology |
| Exam #9: | _____ | Cellular Respiration |
| Exam #10: | _____ | Nervous Tissue |
| Exam #11: | _____ | Spinal Cord, Brain<br>Autonomic Nervous System |

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 | | | |

**Course Average:** _____
**Letter Grade:** _____

## 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.

# NORTHERN ESSEX COMMUNITY COLLEGE
# ACADEMIC CALENDAR
# Summer – 2019

## SUMMER SESSION I

*Classes meet (6 weeks)*
*Tuesday, May 14 – Friday, June 21*

| | |
|---|---|
| Session I classes begin | May 14 |
| Memorial Day – College Closed | May 27 |
| Last day to withdraw with "W" | May 31 |
| Finals Period Day and Evening Classes | June 17-21 |
| *Grades due by 12 p.m. | June 24 |

## SUMMER SESSION II

*Classes meet (6 weeks)*
*Monday, June 24 – Friday, August 2*

| | |
|---|---|
| Session II classes begin | June 24 |
| July 4th - College Closed | July 4 |
| Last day to withdraw with "W" | July 17 |
| Finals Period, Day and Evening Classes | July 29 – Aug. 2 |
| *Grades due by 12 p.m. | Aug. 6 |

## SUMMER SESSION III

*Classes Meet (12 weeks)*
*Tuesday, May 14 – Friday, August 2*

| | |
|---|---|
| Session III classes Begin | May 14 |
| Memorial Day – College Closed | May 27 |
| July 4th Holiday College Closed | July 4 |
| Last Day to withdraw with "W" | June 28 |
| Finals Period, Day and Evening Classes | July 29 – Aug. 2 |
| *Grades Due by 12 p.m. | Aug. 6 |