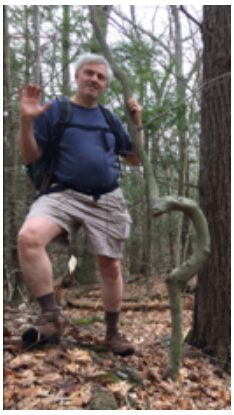
North Shore Community College
Danvers, Massachusetts
BIO 211 V04 (19151) – Anatomy and Physiology I
Spring 2021 (January 19, 2021 – May 10, 2021)

Instructor Contact Information

Instructor: Noel Ways
Email: nways@northshore.edu
Virtual Office Hours: As our schedules vary dramatically from one person to another, specific "office hours" that work for all can be challenging. If you would like to meet, email me, and we can set up a timely meeting with Zoom. On Blackboard, you will find a link, "Zoom, Let's Talk," where you will find an "office hours" link.



Welcome to Anatomy and Physiology I. My name is Noel Ways. I am a biologist by training, and over the past 35 years, I have had the privilege to teach this course hundreds of times. Oddly, it never gets old. The material is the same, but what breathes life into the classroom every semester is the student. We work together, and we learn together. As you begin your journey into this segment of your academic career, I am here to help guide and encourage you to be the best you can be. Welcome to the class.

Course Information

Online meeting times: Tuesday and Thursday 12:30 am – 2:45 pm using the Zoom platform.
Credits: 4 Credit Hours. 3 Lecture hours, 2 Lab hours
Prerequisites: Communication & Mathematics proficiency and BIO101 or BIO105 with a C or better.

College Course Description

This is the first course of a two part sequence that studies the human body. It is primarily designed for those students pursuing majors in the health professions. Topics include tissues, and the skeletal, muscular, and nervous systems including the organs of special sense, and a review of basic chemistry and cellular structure and function. Laboratory work is designed to supplement the lecture material. Fulfills, open, liberal arts, and with BIO212, the laboratory science sequence electives. (3 hours of lecture and 2 hours of laboratory per week). Pre-requisite equivalents for BIO211 include: TEAS - Science section score of 50 or higher (no time limit), LPN Certificate (no time limit), CLEP test with a score of 50 or higher, High School Biology with a grade of C or better taken within 5 years, AP Biology Test with a score of 3 or better with the last 5 years, Bachelor's degree or higher in Biological science or chemistry. Formerly BIO103

General Course Description

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 dissection, microscope work, and the study of charts and models.

General Course Objectives

As we endeavor to prepare you for a career in the allied health professions, specific goals and benchmarks have been established towards this aim. Looking towards this end, the general course objectives listed below expand on the overall course description. As the flow of the course ensues, you will find that the course topics and laboratory work will align with these objectives.

- Develop a working knowledge of anatomical terminology applicable to writing medical reports and reading professional literature associated with their discipline.
- Develop an understanding of how homeostasis is maintained through negative and positive feedback systems
- Distinguish between essential chemical processes and molecular classifications in preparation for further discussion of physiological concepts in both A&P I and A&P II, and clinical instruction.
- Compare and contrast the functional relationships of major cellular organelles.
- Compare and contrast transport mechanisms for substances entering and exiting through the cell membrane.
- Critique different tissues found in the body according to their function-location relationships.
- Differentiate between the regions of the Integumentary System and their functions.
- Write the process of deep wound healing while taking into account the logical progression of healing events through time.
- Relate the structural makeup of osseous tissue to healthy bone maintenance.
- Diagram the homeostatic mechanisms involved in the maintenance of normal blood calcium levels.
- Compare and contrast the stages in the process of healthy bone growth.
- Develop a working knowledge of the body's major bones and the numerous processes, fosses, etc. of the same.
- Categorize the major articulations of the body, both structurally and functionally.
- Relate the anatomy of muscle tissue to how muscles contract.
- Predict the amount of ATP produced per one glucose molecule based upon an illustrated • Predict the actions of various muscle contractions based upon their location, origin, and insertion.
- Compare and contrast the major parts of the central nervous system according to their essential functions.
- Examine the process of nerve impulse propagation.
- Produce illustrated diagrams of select spinal reflexes.
- Distinguish between the different parts of the human brain and their respective functions.
- Compare and contrast how the different parts of the central nervous system work in a coordinated manner.
- Predict the levels of both sympathetic and parasympathetic nervous activity under various degrees of stress and rest.

Course Materials

- **Textbook (Required):** *Anatomy and Physiology 9th Edition* , *by Saladin, McGraw Hill Publishers., © 2021*
  To access e-text and online resources use this link:

  https://connect.mheducation.com/class/n-ways-spring-2021-bio211-vo4

- **Videos:** YouTube Lecture Videos with Closed Caption
- **Handouts:** Accessible and downloadable PDFs
- **Internet:** Web sites that feature animations explaining complex physiology

Aside from the required text, course material are linked on blackboard.

Zoom Links

Click Here to Open Zoom → Zoom - Anatomy and Physiology I (Class Meeting)

Topic: Anatomy and Physiology I (Class Meeting)
Time: This is a recurring meeting Meet anytime

Join Zoom Meeting
https://northshore-edu.zoom.us/j/94852593205

Meeting ID: 948 5259 3205
One tap mobile
+16465588656,,94852593205# US (New York)
+13017158592,,94852593205# US (Washington D.C)

Dial by your location
+1 646 558 8656 US (New York)
+1 301 715 8592 US (Washington D.C)
+1 312 626 6799 US (Chicago)
+1 669 900 9128 US (San Jose)
+1 253 215 8782 US (Tacoma)
+1 346 248 7799 US (Houston)
Meeting ID: 948 5259 3205
Find your local number: https://northshore-edu.zoom.us/u/abKFgCov15

Join by Skype for Business
https://northshore-edu.zoom.us/skype/94852593205

Click Here to Open Zoom Office Hours → Office Hours

Join Zoom Meeting
https://northshore-edu.zoom.us/j/98810917738

Meeting ID: 988 1091 7738
One tap mobile
+16465588656,,98810917738# US (New York)
+13017158592,,98810917738# US (Germantown)

Dial by your location
+1 646 558 8656 US (New York)
+1 301 715 8592 US (Germantown)
+1 312 626 6799 US (Chicago)
+1 669 900 9128 US (San Jose)
+1 253 215 8782 US (Tacoma)
+1 346 248 7799 US (Houston)
Meeting ID: 988 1091 7738
Find your local number: https://northshore-edu.zoom.us/u/abDA6LcITI

Course Requirements

Method of Instruction

This course is an online synchronously delivered course using the Zoom platform, and will be utilizing resources available through Blackboard and the instructor's website, to which Blackboard is linked. Each lecture/module has a **Learning Guide** that will help guide the student through the lecture, videos, animations, and other media under consideration for any particular lecture/module. Also available is a **Lecture Outline** that provides structures to the course content, and is an aid toward preparation for assessment exams. Archived videos of the lectures are also provided that will allow for review of course content material presented in the online lecture setting . Both the lecture outlines and the video support page can be found online. Exams are given on a lecture by lecture basis and should be completed before beginning the next lecture sequence. These exams will cover material covered on the outlines, handouts, as well as on the videos. The exams are noncumulative, but any particular lecture topic assumes a working knowledge of previous lecture topics.

For additional details of the module week, see "Course Walkthrough (or Instructional Rhythm) in the Getting Started folder on Blackboard.

Workload

We all come from different backgrounds, varying employment obligations, family relationships, and responsibilities that need to be maintained. With all the various pulls on our time and resources, it can sometimes be difficult to schedule another significant activity into one's daily routine. And scheduling several hours daily for study can be a daunting prospect for some. But this must be looked at immediately and requires a quality decision if success is to be assured.

Typically, 2-3 hours needs to be set aside daily for the mastery of the material. However, this is highly individualistic, but it is crucial to determine your individual learning requirements.

I also encourage you to talk to those people important in your life about your educational needs at this juncture in your developing career. I would encourage you to look carefully at all the time demanding activities in your life and make appropriate adjustments in light of your important career aspirations. The word "priorities" comes to mind here.

Assignments

Anatomy and Physiology I is a content-heavy course. Your primary assignment for each lecture topic is to build for yourself a foundation that will carry you through the rest of your developing career. So with the beginning of a module/lecture topic, your assignment will be to gain a working knowledge of the body of material presented.

Also, as Anatomy and Physiology I is a laboratory course, some topics are presented and assessed more than once, once in a lecture context and the other in a laboratory context. For example, we will discuss histology in a lecture context and have an appropriate assessment. We will also study actual histological samples, and these are assessed using another assessment format, the laboratory practical, where the material is presented entirely visually. Having alternative methods of studying the material and alternative forms of assessment provides students with different ways to access the content, demonstrate mastery, and reinforce important topics.

To begin the learning process, start with the **Learning Guides**. These documents will provide insight into approaching the material on a module by module basis and point out issues that require special attention or preparation. The lecture outline will then systematically guide you through the text and lecture content. If something is on the outline, you need to know it; if something is not on the outline, you are not responsible for it, even if it is in your text. Handouts and videos will supplement and reinforce key concepts in out online class settings. Regarding the **Video Support**, here I will talk through the lecture content following the outline closely. Note, if something is on the outline you are responsible for it, even if I do not talk about it. Nevertheless, it will require TIME to go over the outlines, view associated videos, and study the handouts to gain a working understanding of the material. Regarding laboratory material, mastery of the anatomical characteristics of tissue, bones, organs, etc. will be important as well as associating appropriate functions with them.

Exams and Make Up Work

Exams are to be taken on Blackboard on the day designated by the syllabus. Exams are designed to demonstrate your mastery of the material presented and therefore are to be done individually and without the support of notes, text, or other resources. So, there is an honor system here. The exams are also timed. You will have enough time to read the question, pause, and put down an answer.
So, in order to make sure that this process goes well, master the material well before the exam date.
Also, there is no backtracking, and the exams must be done in one sitting.

Exams consist of a variety of question types listed below. For details, see the "Assessments" document online.

- True and False
- Matching
- Fill in the Blanks
- Illustrations
- Guided Essays
- Short Answers

Makeup Exams are to be avoided! But if a makeup is needed, documentation is required to certify that the need is legitimate. If documentation is not presented, a makeup is still permitted, but an adjustment is to the grade is made at the discretion of the instructor. This adjustment is typically a reduction in extra points that would otherwise bolster your grade. You will never get a grade lower than your earned grade. But if there is to be a makeup, this task should be accomplished within a week that the student returns to school. Contact me so that a time and a date can be coordinated.

Communication and Interaction:

Throughout the semester, I will be communicating with you at the beginning of class times and post announcements on Blackboard to offer advice, provide comments, and give reminders. Should you ask me a question that has class wide import, the question may be answered and shared with the class. The good place to ask questions is the "Student Interaction Board" on the Blackboard. By using this resource, all students will profit from the questions and the responses. Another venue for communication is by scheduling a meeting using Zoom. Students are also encouraged to form online study groups. I have found that students who study together and talk through the material tend to excel.

Blackboard

Please make sure to log in to the Blackboard site AT LEAST once a day. I will also regularly broadcast emails or post announcements to the class on Blackboard. In such cases, Blackboard will send the email to your NSCC student email account. If you wish, you can change which email account these messages are sent to in your Blackboard settings.

If you find that you are having difficulty with blackboard, contact the college "helpdesk" at bbhelp@northshore.edu

Email

Please check your student email daily. You can also forward your student mail to any another email account.

Email is the best way to contact me. The turnaround time is typically 24 hours, or less.

Email: nways@northshore.edu

When you send me an email, always include:

- Your name
- Your class (either course number or title, day, and time)
- A relevant subject

Basis for Grading

As mentioned above, this course aims to build a foundational knowledge base so that you may become a competent medical professional. A commitment of time and hard work goes a long way towards realizing your career goals. Further, when one receives good grades on exams it gives a certain satisfaction of a job well done.

Exams - Note, **Grading Criteria** are presented in the **Learning Guides** available on Blackboard. See the Learning Guides for specifics on the criteria for grading, suggestions on where to focus, and for special exam activities. Exams are given on a weekly basis. On the day of an exam, the exam will be found in the appropriate folder (i.e., Exam #1 will be in the "Organization of the Human Body" folder; Exam #2 will be in the "Chemistry of Life" folder).

Exam #1	Organization of the Human body	100 points
Exam #2	Chemistry of Life	100 points
Exam #3	Cytology	100 points
Exam #4	Histology	100 points
Exam #5	Integumentary system	100 points
Exam #6	Skeletal (Osseous) Tissue	100 points
Lab Exam #1	Histology Practical	100 points
Exam #7	Articulations	100 points
Exam #8	Glycolysis and Cellular Respiration	100 points
Lab Exam #2	Laboratory Practical on Skeletal System	100 points
Exam #9	Myology	100 points
Exam #10	Nervous Tissue	100 points
Exam #11	Spinal Cord, Brain, Autonomic Nervous System	100 points

All exams are weighted equally. Always record your grades! You will want to do this to ascertain how you are doing in the class and be alerted if there is ever (there rarely is) something that appears questionable. You can always email me if you have a question.

Grade Calculation - The assignment of a final semester grade will be dependent upon the completion of all

lecture exams and lab practicals. All exams are weighted equally. Of all the exams given, the lowest grade may be dropped except for the last unit. To calculate your grade: drop the lowest grade, do a simple average, and then use the Number/Grade Equivalency chart (below). You will know where you stand in the class regarding your grade at any particular point in time.

NSCC Grading System

Grade	QP Value	Numeric Range/Comment
A	4.00	93-100
A-	3.70	90-92
B+	3.30	87-89
B	3.00	83-86
B-	2.70	80-82
C+	2.30	77-79
C	2.00	73-76
C-	1.70	70-72
D+	1.30	67-69
D	1.00	63-66
D-	1.00	60-62
F	0.00	59 or less; failure; no credit earned
W	0.00	Withdrawal from course by student within withdrawal period

Accessibility/Learning Disabilities

Accessibility Services Statement - "As a student at North Shore Community College (NSCC), you are invited to engage in an interactive, collaborative partnership with Accessibility Services and your professor to meet any disability-related need for reasonable academic accommodations in this course.

- To begin this process, please visit www.northshore.edu/accessibility_services and follow the outlined procedure to request services.
- If you have already received approval for accommodations from Accessibility Services at NSCC, please present your professor with your Faculty Notice of Academic Accommodations during the first week of the semester or as soon as possible. Accommodations go into effect once you hand-deliver this notice to your professor.
- If you will require assistance during an emergency evacuation on campus, please notify your professor immediately. For your reference, evacuation procedures are posted in all classrooms."

As your instructor, I feel I have a responsibility to do everything within reason to actively support a wide range of learning styles and abilities. As such, I have taken training and applied the principles of Universal Design for Learning (UDL) to this course. Feel free to discuss your progress in this course with me at any time. In addition, if you require any accommodations, submit your verified accommodations form to me during the first two weeks of the course.

Statement on Plagiarism and Academic Integrity

As students pursuing a career in the allied health professions, you will someday be in a position with medical or other important responsibilities. The health and well-being of the people you work with and for is paramount in importance. To operate competently in such positions, a strong foundation in anatomy and physiology is essential. Towards this end, exams serve as weigh points along your road to success. They indicate that your progress is proceeding well, and you are succeeding in your career goals at this time. But to assure that this process proceeds well, academic integrity and ethical behavior are vital.
To receive a grade that does not accurately reflect your knowledge and skill undermines your academic progress and puts you at risk of not fulfilling your goals or potentially harming others in your care. All future course work and clinical activity will stand squarely on the shoulders of the knowledge base you are lying down now.

All work done on assessments and practicals must be your own. You are encouraged to work together, prepare together, and collaborate, but the work must be your own when an exam is done. Therefore, the following guidelines are established to help guide you in an ethical and legitimate approach to your assessments.

1. When exams are taken, no electronic devices may be on.
2. No web browsers or other sources of information may be used.
3. Violation of the above will result in one of the following:
    - a "0" on the exam
    - an "F" for the Course
    - a meeting with the dean of students who would assess the infringement and follow college disciplinary procedures.

Getting Help

I am here to help you with this course and to make this an enjoyable and successful experience. If you would like assistance regarding study tips, progress, or other issues, please send me an email. We can also collaborate through an appointment on Zoom. Please do not wait until the last moment to ask for help. Remember, I am just an email away.

Additional Educational Services

Tutoring: NSCC also offers FREE tutoring and other services at:
https://www.northshore.edu/support/tutoring/index.html

Lecture Syllabus

Below is the schedule of topics and dates. The schedule could be adjusted should unforeseen circumstances occur. Note, the modules below always start on a Tuesday, and the assessment for that module can be anticipated the following Tuesday. It is best to take the assessment first before starting the new module.

Assignments

On a module start date, a particular Lecture Topic will be under consideration. Your assignment is to use what is presented in lecture and the resources provided to you to begin mastering that topic in preparation for an exam on that topic. As mentioned above, read the Learning Guide found on Blackboard for particular guidance on how to approach the material. The Lecture Outline will provide structure and organization for the lecture content, and it provides room to take notes. And supplemental handouts will reinforce and expand on anatomical and physiological topics of particular importance or complexity. During our lecture times, I will walk you through all (with a few exceptions) the material. You will find that the videos will do likewise.

For any particular module start date, this will also serve as the date of assessment for a previous module. So, before you start the new unit, take the required exam for that day first. For example:

On January 26, we will start the discussion on Chemistry of Life, but take Exam #1 on Organization of the Human body before you begin this unit. Please have exams done by midnight.

On February 9, we will start the module on Histology, but take Exam #3 on Cytology before you begin this unit. Please have exams done by midnight.

January 19 → **Start Module #1 - Organization of the Human Body**

January 26 Exam on Module #1 - Organization of the Human Body
→ **Start Module #2 - Chemistry of Life**

February 2 Exam on Module #2 – Chemistry of Life
→ **Start Module #3 - Cytology**

February 9 Exam on Module #3 – Cytology
→ **Start Module #4 - Histology**

February 16 Exam on Module #4 – Histology
→ **Start Module #5 - The Integumentary System**

February 23 Exam on Module #5 – The Integumentary System
→ **Start Module #6 - Skeletal Tissue**

March 2 Exam on Module #6 – Skeletal Tissue
→ **Start Module #7a - Axial Skeletal System**

March 9 No Exam – Spring Break

→ **Start Module #8 - Articulations**

March 16 Lab Practical #1 – The Histology Practical
→ **Start Module #7b - Appendicular Skeletal System**

March 23 Exam on Module #8 – Articulations
→ **Continue Module #7 on Skeletal System**

March 30 Lab Practical #2 – The Bone Practical
→ **Start Module #9 - Glycolysis and Cellular Respiration**

April 6 Exam on Module #8 – Glycolysis and Cellular Respiration
→ **Start Module #10 - Myology**

April 13 No Exam
→ **Continue Module #10 – Myology (if needed)**
Start Module #11 - Nervous Tissue

April 20 Exam on Module #9 – Myology
→ **Continue Module #11 - Nervous Tissue**

April 27 Exam on Module #11 – Nervous Tissue
→ **Start Module #12a – Spinal Cord**

May 4 No Exam
→ **Start Module #12b - Brain, and Autonomic Nervous System**

May 13 (Thurs) Exam on Module #12 – Spinal Cord, Brain, and Autonomic NS

Academic Calendar

Spring 2021

Classes begin, day and evening	January 19, 2021
Student add/drop period	January 19-25, 2021
Deadline to withdraw from full semester classes and receive 100% refund of tuition and fees is 5:00 pm	January 25, 2021
Deadline to withdraw from full semester classes and receive tuition only is 5:00 pm	February 1, 2021
**For all other course start dates, other than the ones shown above, please go to:*	**add/drop deadlines**
Deadline to change from audit to credit or credit to audit	February 8, 2021
President's Day, no classes	February 15, 2021
Summer registration opens	March 3, 2021
Spring recess, no day and evening classes	March 7-13, 2021
Classes resume, day and evening	March 15, 2021
Deadline to petition for spring graduates and ensure name in program	March 26, 2021
Fall registration begins	April 5, 2021
Final Exam Schedule distributed to students and posted	April 10, 2021
Deadline for IP Contracts for Fall 2020	April 16, 2021
Last day to withdraw from the College with a "W" grade for 15-week courses	April 17, 2021
Patriot's Day, no classes	April 19, 2021
Student evaluation week for adjunct faculty	April 26-May 1, 2021
Classes end, weekend only	May 8, 2021
Classes end, day and evening	May 10, 2021
Study days/make up snow days, if necessary	May 11-12, 2021
Final Exam period, day classes	May 13-14, 2021
Grades posted on MyNorthShore	May 19, 2021