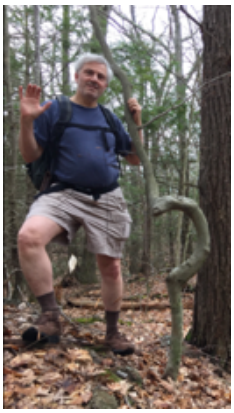
North Shore Community College
Danvers, Massachusetts
BIO 211 F04 (80400) – Anatomy and Physiology I
Fall 2023 (September 6, 2023 – December 19, 2023)

Welcome



Welcome to Anatomy and Physiology I. My name is Noel Ways. I am a biologist by training, and for over 30 years, I have had the privilege to teach both A&P I and A&P II hundreds of times. Oddly, the content 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.

Instructor Contact Information

Instructor: Noel Ways
Email: nways@northshore.edu
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 there are two options:

- ***Meet after class*** - This is always best option.
- ***Zoom meeting*** - email me, and we will schedule meeting using Zoom video teleconferencing software program during a mutually acceptable time. On Blackboard, you will find a "Zoom Office Hours" link.

Course Information

BIO 211 F04 – Anatomy and Physiology I **CRN:** 80400
Class Room Meeting Times: Danvers 211 Monday/Wednesday 11:00 – 12:15
Laboratory Meeting Time: Danvers 221 Wednesday 12:30 – 2:20
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 & Physiology, by OER Commons
- Note, the textbook is obtained as a free online resource, and can be accessed at:

  https://www.oercommons.org/courses/anatomy-and-physiology-4/view

- **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, other course material resources are linked on blackboard.

Zoom Link(s)

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 (Washington DC)

Dial by your location
+1 646 558 8656 US (New York)
+1 301 715 8592 US (Washington DC)
+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/acwEP5ff4F

Join by Skype for Business
https://northshore-edu.zoom.us/skype/98810917738

Office hours are after class. Should this not work for you, we can coordinate a "Zoom Office Hour Meeting." Just talk to me after class, or send an email so that we can coordinate a time. In person is always better.

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 - 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. The blackboard college "helpdesk": bbhelp@northshore.edu

Email

Please check your NSCC student email daily. Do not use your personal email – you may not get a response. Note you can also forward your student mail to any another email account. 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 M1	Organization of the Human body	100 points
Exam M2	Chemistry of Life	100 points
Exam M3	Cytology	100 points
Exam M4	Histology	100 points
Exam M5	Integumentary system	100 points
Exam M6	Skeletal (Osseous) Tissue	100 points
Lab Exam #1	Histology Practical	100 points
Exam M8	Articulations	100 points
Exam M9	Glycolysis and Cellular Respiration	100 points
Lab Exam #2	Laboratory Practical on Skeletal System	100 points
Exam M10	Myology	100 points
Exam M11	Nervous Tissue	100 points
Exam M12	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. When Artificial Intelligence (AI), Chat GTP or other resources are detected, answers are automatically marked wrong.
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

Assignments - 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. The Lecture Outline will provide structure and organization for the lecture content, and it provides room to take notes. Supplemental handouts reinforce and expand on 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. If time constraints truncate a portion of the lecture sequence, you will be able to compete the topic using online video support.

SCHEDULE – Fall 2023 – NSCC – Bio 211 F04

Lecture: Monday/Wednesday
Room 211, Time: 11:00 am – 12:15
Lab: Wednesday
Room 221, Time: 12:30 am – 2:20

Below is a tentative but probable schedule of topics and dates. The schedule may be modified according to the progress of the lecture or unforeseen circumstances.

NOTE: the lowest exam grade may be dropped with the exception of the last three exams:

- Bone Practical
- Nervous System Exams

Exams administered on BLACKBOARD will open at 8 am and must be completed by 11:59 pm. Please plan accordingly.

Exams administered **IN CLASS** start at the beginning of class. Please be on time.

Any changes will be announced in class.

→ Should there be an unforeseen college closure on a day when an exam in scheduled to be administered in class, The exam will be automatically administer on BLACKBOARD.

September 6 (W) → Start Module – Introduction to the Human Body

September 11 (M) ***Exam*** - Introduction to the Human Body **IN CLASS**
→ Start Module - Chemistry of Life
September 13 (W) ❊ Continue Chemistry of Life

September 18 (M) ***Exam*** – Chemistry of Life, Part #1 **IN CLASS**
→ Start Module - Cytology
September 20 (W) ***Exam*** – Chemistry of Life, Part #2m (BLACKBOARD)
❊ Continue Cytology

September 25 (M) → Start Module – Histology
September 26 **(Tues.)** ***Exam*** – Cytology (BLACKBOARD)
September 27 (W) ❊ Continue Histology

October 2 (M) → Start Module - The Integumentary System
October 4 (W) ***Exam*** – Histology **IN CLASS**
❊ Continue Integumentary System

October 9 (M) Columbus Day, College Closed

October 10 **(Tues.)** ***Exam*** – The Integumentary System (BLACKBOARD)

→ Start Module - Skeletal Tissue

October 11 (W) ❊ Continue Skeletal Tissue

October 16 (M) ***Exam*** – Osseous Tissue **IN CLASS**

→ Start Module - Axial Skeletal System

October 18 (M) ❊ Continue Axial Skeletal System

October 23 (M) ***Lab Practical #1*** – The Histology Practical **IN CLASS**

→ Start Module - Appendicular Skeletal System

October 25 (W) ❊ Continue Appendicular Skeletal System

October 30 (M) ❊ Continue Appendicular Skeletal System

→ Start Module - Articulations

November 1 (W) ❊ Continue review of the skeletal system

November 6 (M) → Continue Skeletal System / Review

November 7 **(Tues.)** ***Exam*** – Articulations (BLACKBOARD)

November 8 (W) ❊ Continue Skeletal System

November 13 (M) → Start Module - Glycolysis and Cellular Respiration

November 15 (W) ❊ Continue Glycolysis and Cell. Resp.

November 20 (M) ***Exam*** – Glycolysis and Cellular Respiration **IN CLASS**

→ Start Module - Myology

November 22 (W) ❊ Continue Myology

November 27 (M) ***Exam*** – Myology **IN CLASS**

→ Start Module - Nervous Tissue

November 29 (W) ***Lab Practical #2*** – The Bone Practical (Axial and Appendicular) **IN CLASS**

❊ Continue Nervous Tissue

December 4 (M) → Start Module - Spinal Cord

December 6 (W) ***Exam*** – Nervous Tissue **IN CLASS**

❊ Continue Spinal Cord

December 11 (M) No Exam

→ Start Module - Brain, and Autonomic Nervous System

December 13 (W) ❊ Brain Dissection (***Goggles***, not safety glass, are *Mandatory*)

❊ Autonomic Nervous System

December 18 (M) ***Exam*** – Spinal Cord, Brain, and Autonomic Nervous System **IN CLASS**

NORTH SHORE COMMUNITY COLLEGE
ACADEMIC CALENDAR, ABRIDGED

Fall 2023

- Official NECC Academic Calendar

Below is an *abridged* rendition of the Academic Calendar.
Click the link above for the official NSCC Academic Calendar.

Credit classes begin, day and evening	Sep 6, 2023
Student add/drop period	Sep 6-12, 2023
Deadline for student to change from audit to credit or credit to audit	Sep 26, 2023
Indigenous Peoples Day, no classes	Oct 9, 2023
Mid-term Alerts due by 5 pm	Oct 23, 2023
Veterans Day, observed (no classes)	Nov 10, 2023
Thanksgiving recess, no day or weekend courses	Nov 23-25, 2023
Last day to withdraw and receive W grade for 15-week courses	Nov 28, 2023
Classes end, day and evening	Dec 19, 2023
Final exam period, day classes	Dec 20-21, 2023
Grades due from faculty by noon	Dec 26, 2023
Grades posted on MyNorthShore for students	Dec 28, 2023

*Academic standing will be updated within 48 hours.