

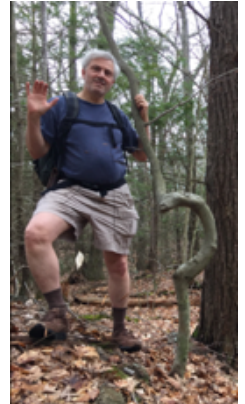
North Shore Community College
Danvers, Massachusetts
Department of Science, Technology, Engineering, and Mathematics
BIO 212 V02 – Anatomy and Physiology II
Fall 2021 (September 7, 2021 – December 20, 2021)

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 will schedule meeting using Zoom video teleconferencing software program during a mutually acceptable time. On Blackboard, you will find a “Zoom Office Hours” link.



Welcome

Welcome to Anatomy and Physiology II. 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.

Course Information

Online meeting times: Tuesday and Thursday 11:00 am – 1:15 pm using the Zoom video teleconferencing software program.

Credits: 4 Credit Hours. 3 Lecture hours, 2 Lab hours

Prerequisites: BIO103 with 'C' or better

College Course Description

Continuation of Anatomy and Physiology 1. Topics include the digestive, respiratory, urogenital, and circulatory systems and the endocrines. Laboratory work is designed to supplement the lecture material and includes dissection of the fetal pig. Fulfills open, liberal arts, and with BIO103, laboratory science sequence electives (3 hours of lecture and 2 hours of lab per week.)

General Course Description

Human Anatomy and Physiology II is designed to provide an anatomical and physiological foundation for students pursuing careers in the allied health fields. Human Anatomy and Physiology, as the name implies, is the study of the human body: how it is put together and how the various parts work together. This course is a continuation of Human Anatomy and Physiology I, and will proceed on a system-by-system basis.

The course will commence with a three-week study of the cardiovascular system, followed by an in-depth view of the respiratory system. Other organ systems such as the digestive system, urinary system, reproductive system will also be examined. Other subjects of particular relevance will be discussed at appropriate points in the lecture sequence.

The course's laboratory component is designed to give the students 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. This component of the course will be delivered online using online and video resources.

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, 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.

Module - Blood

- Distinguish between the formed elements of the blood by name and function.
- Describe erythrocyte production and regulation.
- Describe hemostasis and the control of blood clotting.
- Illustrate the CO₂ gas transport as it involved erythrocytes.
- Compare and contrast leukocyte functions in fighting infection.

Module - Heart

- Identify the name and functions of the structures of the heart.
- Explain the cardiac cycle, integrating electrical activity, pressure issues, EKG, heart sounds, and blood flow.
- Describe how cardiac output is controlled.

Module – Vessels and Routes

- Compare and contrast how the tissues of blood vessels and how tissue differences affect the specific functions of various vessel types.
- Identify specific major blood vessels in the body.
- Describe the vessels of and function of the hepatic portal system and the hypothalamic hypophyseal portal system.
- Describe the fluid exchange of capillaries and fluid return to the heart.
- Illustrate blood pressure regulation.

Module – Lymphatic System

- Identify the name and functions of lymphatic organs.
- Describe the relationship of various organs to the particular functions in the immune response and other blood maintenance activities.

Modules – Nonspecific Host Immunity *and* Adaptive Immunity

- explain the essential components of both non-specific and specific host immune responses.
- Critique the complement system and place of interferon in the immune system.

Module – Respiratory System

- Identify the major organs of the respiratory system and their functions.
- Explain the mechanism of gas transport.
- Describe the anatomy and physiology of the larynx and sound production.
- Explain how lungs are “inflated” and what happens in pneumothorax.
- Explain the mechanisms that affect the oxygen carrying-capacity of hemoglobin.

Module – Digestive System

- Identify the major organs of the digestive system and their functions.
- Describe gastric regulation
- Describe the process of lipid digestion and transport
- Describe the process of deglutition

Module – Urinary System

- Identify the major organs of the urinary system and their functions.
- Compare and contrast nephron components in terms of their anatomy and physiology

Modules – Male Reproductive System and Female Reproductive System

- Identify the structures and functions of major organs of the reproductive system
- Describe the hormonal regulation of spermatogenesis
- Describe and integrate the physiology of both the uterine cycle and the ovarian cycle
- Illustration several examples of hormonal regulation in the body

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/paamweb/index.html#/registration/signup/n-ways-fall-2021-tt-1100--115>

- **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 - Class Meeting Link and “Office Hours Link”

Zoom - Anatomy and Physiology II (Class Meeting)

NOEL WAYS is inviting you to a scheduled Zoom meeting.

Topic: Anatomy and Physiology II (Class Meetings)

Time: This is a recurring meeting Meet anytime

Join Zoom Meeting
<https://northshore-edu.zoom.us/j/92239523821>

Meeting ID: 922 3952 3821
One tap mobile
+16465588656,,92239523821# US (New York)
+13017158592,,92239523821# 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: 922 3952 3821
Find your local number: <https://northshore-edu.zoom.us/u/abUFc6F9mG>

Join by Skype for Business
<https://northshore-edu.zoom.us/skype/92239523821>

Office Hours

NOEL WAYS is inviting you to a scheduled Zoom meeting.

Topic: Anatomy and Physiology II (Office Hours)
Time: This is a recurring meeting Meet anytime

Join Zoom Meeting
<https://northshore-edu.zoom.us/j/98590288536>

Meeting ID: 985 9028 8536
One tap mobile
+13017158592,,98590288536# US (Washington DC)
+13126266799,,98590288536# US (Chicago)

Dial by your location
+1 301 715 8592 US (Washington DC)
+1 312 626 6799 US (Chicago)
+1 646 558 8656 US (New York)
+1 253 215 8782 US (Tacoma)
+1 346 248 7799 US (Houston)
+1 669 900 9128 US (San Jose)

Meeting ID: 985 9028 8536
Find your local number: <https://northshore-edu.zoom.us/u/aeHpPWas0H>

Join by Skype for Business
<https://northshore-edu.zoom.us/skype/98590288536>

Course Requirements

Method of instruction

This course will be delivered online asynchronously; and will also have a weekly Synchronous component. We will utilize resources available through Blackboard and the instructor's website, to which Blackboard is linked. Each lecture/module will have a **Learning Guide** that will guide the student through the supportive readings, videos, animations, and other media under consideration for any particular lecture/module. Also available is a **Lecture Outline** that will guide the student through the course content in preparation for associated assessment exams. The videos of the lectures will follow a lecture outline closely. 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, and varying employment obligations, and may have 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 major activity. Scheduling of 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, and it is crucial to determine what your individual learning requirements are.

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 is a content-heavy course of study. 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 is to gain a working knowledge of the body of material being presented.

Also, as Anatomy and Physiology II is a laboratory course, many topics are presented and assessed in both a lecture and a laboratory context. For example, we will discuss the heart in a lecture context and have an appropriate assessment. We will also study a heart dissection and models of the heart. This component will be 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, not only provides students with different ways to access the content and demonstrate

mastery, but also reinforces important topics.

To begin the learning process for a module, we **start with the Learning Guide**. This document will provide insight into how to approach the material 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. Regarding the **Video Support**, here I will talk through the lecture content following the outline closely, and with rare exceptions, if I do not talk about something, you do not need to know 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 systems covered will be important as well as associating appropriate functions with their organs.

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.

There is also the possibility that exams can be proctored during class time. When this is the case, I will let you know ahead of time. During such times, the exams will be done at the beginning of class and timed.

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

Make-up 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 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 make-up, 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 contacting on a weekly/biweekly basis to offer you advice, provide comments, and give reminders. If your questions have class wide import, the questions may be answered and shared with the class. The best place to ask questions is the “Student Interaction Board” on blackboard, therefore all students will profit from the questions and the answers. Another venue may be 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. Announcements, class resources and all assessments will be handled through Blackboard. I will also regularly broadcast emails to the class through Blackboard. In such cases, Blackboard will send the email to your NECC student 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”

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** is 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 at the bottom of the list (i.e., Exam #1 will be in the “Blood” folder; Exam #2 will be in the “Heart” folder).

Exam #1	Blood	100 points
Exam #2	Heart	100 points
Exam #3	Vessels and Routes	100 points
Exam #4	Lymphatic and Non-specific Host Immunity	100 points
Exam #5	Non-specific Host Immunity	100 points
Exam #6	Specific Host Immunity	100 points
Lab Exam #1	Lab Practical #1 (Heart and Vessels)	100 points
Exam #7	Respiratory System, Part #1 and Part 2	100 points

Exam #8a	Digestive System, Part #1	100 points
Exam #8b	Digestive System, Part #2	100 points
Exam #9	Urinary System	100 points
Lab Exam #2	Lab Practical #2 (Lymph, Resp, Dig, Uri. Sys)	100 points
Exam #10	Male Reproductive System	100 points
Exam #11	Female Reproductive System	100 points

All exams are weighed equally. Always record your grades!

You will want to do this not only to ascertain how you are doing in the class, but also to 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. Calculation of the grade is therefore simple: 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 a tentative but probable schedule of topics and dates. The schedule could be adjusted should unforeseen circumstances occur. Note, the modules below always start on a Wednesday, and the assessment for that module can be anticipated the following Wednesday. 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 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. And in the lecture videos, I will walk you through all (with a few exceptions) the material.

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

On September 14 we will start the discussion on the Heart, but before you begin this unit, take Exam #1 on Blood.

On September 21, we will start the module on Vessels and Routes, but before you begin this unit, take Exam #3 on Heart.

SCHEDULE – Fall 2021 – NSCC – Bio 212 V02

New Module
START DATES

Exams must
be completed by 11:59 pm

Synchronous Class times:

Tuesday (T) and Thursday (R) 11:00 am – 1:15

September 7 (T)	→ Start Module #1 - Blood
September 9 (R)	* Continue discussion on Blood
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September 14 (T)	<i>Exam #1 – Blood</i> → Start Module #2 – Heart
September 16 (R)	* Continue Heart: Cardiac Cycle and Heart Regulation
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September 21 (T)	<i>Exam #2 - Heart</i> → Start Module #3 - Vessels and Routes
September 23 (R)	* Continue Vessels, Blood Pressure Regulation
<hr/>	
September 28 (T)	<i>Exam #3 – Vessels and Routes</i> → Start Module #4 - Lymphatic
September 30 (R)	* Continue Lymphatic / Introduce Immune System
<hr/>	
October 5 (T)	<i>Exam #4 – Lymphatic</i> → Start Module #5 - Non-specific Host Immunity
October 7 (R)	* Continue Non-Sp Imm. / Wound Healing
<hr/>	
October 12 (T)	<i>Exam #5 – Non-specific Host Immunity</i> → Start Module #6 - Specific Host Immunity
October 14 (R)	* Continue Sp Host Imm. / Rev. Ves. at time permits
<hr/>	
October 19 (T)	<i>Exam #6 – Specific Host Immunity</i> → Start Module #7a - Respiratory System, Part #1
October 21 (R)	* Continue Respiratory System, Part #1
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October 26 (T)	<i>Lab Practical #1 – Heart and Vessel Lab Practical</i> → Start Module #7b - Respiratory System, Part #2
October 28 (R)	* Continue Respiratory System, Part #2
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November 2 (T)	<i>Exam #7 – Respiratory System (Both Parts #1 and #2)</i> → Start Module #8a - Digestive System, Part #1

November 4 (R)	* Continue Digestive System, Part #1
November 9 (T)	<i>Exam #8a – Digestive System, Part #1</i> → Start Module #8b - Digestive System, Part #2
November 11 (R)	* Veterans Day, no class. Complete Dig. Sys, Part #1
November 16 (T)	<i>Exam #8b – Digestive System, Part #2</i> → Start Module #9 - Urinary System
November 18 (R)	* Continue Nephron Physiology
November 23 (T)	<i>No Exam</i> → Review for Lab Practical #2 (and Urinary System ??)
November 25 (R)	* No Class, Thanksgiving Recess
November 30 (T)	<i>Exam #9 – Urinary System</i> → Start Module #10 - Male Reproductive System
December 2 (R)	* Continue Male Reproductive Physiology
December 7 (T)	<i>Lab Practical #2 – Lymph., Resp., Dig., and Urinary Systems</i> → Continue Module #10 - Male Reproductive System → Start Module #11 - Female Reproductive System
December 9 (R)	* Continue Female Reproductive System
December 14 (T)	<i>Exam #10 – Male Reproductive System</i> → Continue Module #11 - Female Reproductive System
December 16 (R)	* Continue Female Reproductive System
December 22 (W)	<i>Exam #11 – Female Reproductive System</i> → No Lecture

Fall 2021 - Academic Calendar (Copied from web site - modified)

<https://www.northshore.edu/academics/calendar.html>

Classes begin, day and evening	September 7, 2021
Student add/drop period	September 7-13, 2021
Deadline to withdraw from full semester classes and receive 100% refund of tuition and fees is 5:00 pm	September 13, 2021
*For all other course start dates, other than the one shown above, please go to: add/drop deadlines	
Deadline to change from audit to credit or credit to audit	September 28, 2021
Winter/Spring registration opens	November 1, 2021
Veterans Day, no classes	November 11, 2021
Student evaluation week for full-time faculty	November 15-20, 2021
Final exam schedule posted	November 22, 2021
Thanksgiving recess, no evening or weekend classes	November 24-27, 2021
Thanksgiving recess, no day courses	November 25-27, 2021
Last day to withdraw from the College with a "W" grade for 15-week courses	November 29, 2021
Deadline for IP Contracts for Spring and Summer 2021 courses	November 30, 2021
Student evaluation week for adjunct faculty	November 29-December 4, 2021
Classes end, weekend only	December 18, 2021
Classes end, day and evening	December 20, 2021
Final exam period, day classes	December 21-22, 2021
Grades posted on MyNorthShore	December 28, 2021