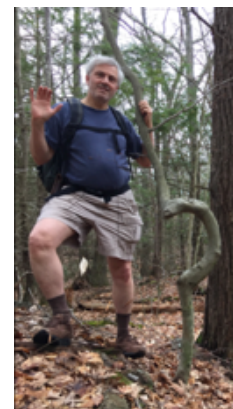


North Shore Community College
Danvers, Massachusetts
Department of Science, Technology, Engineering, and Mathematics
BIO 212 F02 (CRN: 65591) – Anatomy and Physiology II
Summer II 2023 (June 5, 2023 – August 19, 2023)

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

BIO 212 F02 - Anatomy and Physiology II **CRN: 65591**
Credits: 4 Credit Hours. 3 Lecture hours, 2 Lab hours
Prerequisites: BIO 121 Anatomy and Physiology I

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 works for all can be challenging. If you would like to meet, email me, and we will schedule a meeting using Zoom video conferencing software program during a mutually acceptable time. On Blackboard, you will find a “Zoom Office Hours” link.

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, urinary, and reproductive systems, 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 of the anatomical considerations discussed in the lecture and to familiarize them with some of the more basic physiological concerns related to gross anatomy.

General Course Objectives

As we endeavor to prepare you for a career in the allied health professions, specific goals and benchmarks have been established for this aim. Looking toward this end, the general course objectives listed below expand on the overall course description. As the course flow 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* an Open Educational Resource (OER).

<https://openstax.org/details/books/anatomy-and-physiology>

- **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 materials are linked on blackboard.

Zoom Link: “Office Hours”

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

This course is delivered in class, and will be utilizing resources available through Blackboard and the instructor’s website, to which Blackboard is linked. The course curricula are divided up into modules. With few exceptions, each lecture/module has a:

- **Learning Guide** that will guide the student through the lecture, videos, animations, and other media under consideration.
- **Lecture Outline** that provides structure to the course content focuses on preparing the student for assessment exams and includes space for note-taking. In addition,
- Handouts – Additional handouts are provided as needed where support may be needed
- **Video Support** - Archived Videos of the lectures/modules provide instructional delivery in an online lecture setting. Both the lecture outlines, and the video support page can be found online. In the videos, I will walk you through everything!
- **Image Bank** – each module has an image bank with photos, illustrations, and PowerPoint files that may be used as needed by the student.
- **Laboratory** – As Anatomy and Physiology is a laboratory course, special links are provided to laboratory material, videos, photographs, and guides.
- **Exams** are given on a lecture-by-lecture basis and are to be completed by the dates on the schedule below. Exams will be administered through the college testing center. These exams

will cover the material in the outlines, handouts, and videos. The exams are noncumulative, but any 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 must be maintained. With the various pulls on our time and resources, scheduling another major activity can sometimes be challenging. For example, scheduling several hours daily for study can be daunting for some. But this must be looked at immediately and requires a quality decision to ensure success.

Typically, 3-4 hours need to be set aside daily for the mastery of the material. However, this is highly individualistic, and it is crucial to determine what your 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. Finally, 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 sequence. Your primary assignment for each Module is to build for yourself a foundation that will carry you through the rest of your developing career. So, beginning a module/lecture topic, your assignment will be to gain a working knowledge of the module content presented. To start, each Module will have a **Learning Guide** that will walk you through the particular goals and points worthy of consideration in preparation for an assessment. The module content is outlined in the “**Lecture Outline.**” The Lecture Outline will have the following functions:

- The “Lecture Outline” is designed for note taking purposes.
- The “Lecture Outline” is your study outline.
- The “Lecture Outline” is also the exam outline. If something is on the outline you will need to know it. If something is not on the outline, you do not need to know it, even if it is in the textbook.

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 by 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

The assignment of a final semester grade will depend upon completing all exams listed on the syllabus below, of which the lowest grade may be dropped (except for the last unit). These exams will cover material from online assignments, handouts, and video presentations. The nature of the exams is non-comprehensive. However, any particular unit will assume a working knowledge of previous units.

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 and Documentation - 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 to the grade is made at the instructor's discretion. This adjustment typically reduces 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.

Throughout the semester, I will be contacting you 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 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. 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 other 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 the following:

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

Basis of Grading

As mentioned above, this course aims to build a foundational knowledge base so that you may become a competent medical professional. Committing time and hard work go a long way toward 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 special exam activities. Exams are given on a module-by-module basis. If the exam is administered on Blackboard, 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) on the day of the exam. If the exam is administered in class, it will be accomplished at the beginning of the class.

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 something that appears questionable (there rarely is). Of course, you can always email me if you have a question.

Grade Calculation - The assignment of a final semester grade will depend upon completing all lecture exams and lab practicals. All exams are weighted equally. The lowest grade may be dropped except for the last unit of all the exams given. Calculating your current standing in the class is 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 time.

NSCC Grading System

Number/Letter Equivalency:

A	4.0	93-100	C-	1.7	70-72
A-	3.7	90-92	D+	1.3	67-69
B+	3.3	87-89	D	1.0	63-66
B	3.0	83-86	D-	0.7	60-62
B-	2.7	80-82	F	0	Below 60
C+	2.3	77-79	W	0	Withdrawal
C	2.0	73-76	IP	--	In progress

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 of 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 are paramount. A strong foundation in anatomy and physiology is essential to operate competently in such positions. Towards this end, exams serve as weigh-points along your road to success. They indicate that your progress is progressing well and you are now succeeding in your career goals. But to ensure 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 coursework 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 “o” 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 according to the progress of the lecture sequence or should unforeseen circumstances occur.

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. Supplemental handouts will reinforce and expand on anatomical and physiological topics of particular importance or complexity.

SCHEDULE – Fall 2023 – NSCC – Bio 212 F02

The schedule below is a tentative but probable schedule of topics and dates. Lecture and/or Exams dates may be modified according to the progress of the lectures or other course needs.

New Module START DATES

Exams on Blackboard must be completed between 8 am and 12 midnight on the day designated.

June 6 (Tues) → Start Module - Blood

June 8 (Thurs) → Continue Module - Blood

June 13 (Tues) Exam – Blood
→ Start Module – Heart

June 15 (Thur) → Continue Module – Heart

June 19 (MONDAY) Exam – Heart (BLACKBOARD)

June 20 (Tues) → Start Module - Vessels and Routes

June 22 (Thur) → Continue Module - Vessels and Routes

June 27 (Tues) Exam – Vessels and Routes
→ Start Module - Lymphatic

June 29 (Thur) → Continue Module - Lymphatic

July 3-8 → Summer Break, No In-class Meeting

July 3 (MONDAY) Lab Practical #1 – Heart and Vessel Lab Practical (BLACKBOARD)

July 4 (Tues) → Summer Break, No In-class Meeting

July 6 (Thur) → Summer Break, No In-class Meeting

Exam – Lymphatic (BLACKBOARD)
→ **Start – Non-Specific Host Immunity**

July 11 (Tues) → **Continue – Non-Specific Host Immunity**

July 13 (Thur) *Exam – NonSpecific Host Immunity*
→ **Start - Respiratory System, Part #1**

July 18 (Tues) *Exam – Respiratory System, Part #1*
→ **Start - Respiratory System, Part #2**

July 20 (Thur) → **Start - Digestive System, Part #1**

July 21 (FRIDAY) *Exam – Respiratory System, Part #2 (BLACKBOARD)*

July 25 (Tues) *Exam – Digestive System, Part #1*
→ **Start - Digestive System, Part #2**

July 27 (Thur) → **Continue - Digestive System, Part #2**
→ **Review for Lab Practical #2**

August 1 (Tues) *Exam – Digestive System, Part #2*
→ **Urinary System Overview**
→ **Review for Lab Practical #2**

August 3 (Thur) → **Start - Male Reproductive System**

August 5 (SATURDAY) *Lab Practical #2 – Lymph., Resp., Dig.,
and Urinary Systems (BLACKBOARD)*

August 8 (Tues) → **Continue - Male Reproductive System**

August 10 (Thur) *Exam – Male Reproductive System*
→ **Start - Female Reproductive System**

August 15 (Tues) → **Continue - Female Reproductive System**

August 17 (Thur) *Exam #11 – Female Reproductive System*

Academic Calendar, Summer 2023, Abridged

Direct Link to the entire Summer 2023 Academic Calendar:

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

Summer Session II - 10 Week (June 5 - August 19)

Classes begin, day and evening	June 5, 2023
Student add/drop period	June 5-11, 2023
Deadline to withdraw from classes and receive 100% refund of tuition and fees is 5:00 pm	
Juneteenth (observed), no classes	June 19, 2023
Summer Break	July 3-8, 2023
Deadline to change from audit to credit or credit to audit	July 10, 2023
Last day to withdraw from the College with a "W" grade	August 6, 2023
Student evaluations week for adjunct faculty	August 7-12, 2023
Classes end, day and evening	August 19, 2023
Grades posted on MyNorthShore	August 24, 2023