

Anatomy and Physiology 1B: Discovering Form and Function Course Syllabus

What you will learn in this course

Anatomy and Physiology 1B: Discovering Form and Function

Building on the prior prerequisite course, students will examine the form and function of even more body systems. Students will learn about the structure, function, and interrelation between the lymphatic, immune, respiratory, digestive, urinary, and the endocrine systems. The reproductive system is also discussed along with hereditary traits and genetics. Finally, students will explore the importance of accurate patient documentation as well as technology used in the industry.

Unit 1: The Lymphatic and Immune System

As you've already learned, the lymphatic and immune system is one of the major body systems. Some texts will label this body system as simply 'lymphatic' and exclude the immune system perhaps because you can't see it. For the purposes of this course, however, we're going to combine the lymphatic and immune systems so that you develop an understanding of how these two systems work together to protect the human body from bacteria, viruses, and harmful cells within the body (in autoimmune disease and cancer for example).

What will you learn in this unit?

- Describe the structure and function of the immune system
- Compare and contrast the different types of immunity
- Explain the relationship between the lymphatic and circulatory systems
- Discuss common diseases and disorders of the lymphatic and immune system (etiology, prevention, pathology, diagnosis, treatment, and rehabilitation)

Unit 2: The Respiratory System

It's obvious that the respiratory system is important. All cells of the body require energy, and this energy cannot be obtained through chemical reactions without oxygen. The respiratory system not only provides the route to collect the oxygen that is used in each of the metabolic processes that sustain life, but it also provides the route to rid the body of carbon dioxide, the by-product of many of these metabolic processes. In this unit you will examine the structures that support the respiratory system, explore how oxygen is brought to the sites of cellular metabolism to help maintain homeostasis, and learn what happens when the respiratory system is compromised. Now, take a deep breath and read on.

What will you learn in this unit?

- Describe the structure and function of the respiratory system

- Compare and contrast ventilation and respiration
- Explain gas exchange
- Discuss common diseases and disorders of the respiratory system (etiology, prevention, pathology, diagnosis, treatment, and rehabilitation)

Unit 3: The Digestive System

The digestive system is quite familiar to us since we are aware that we use it several times a day. There are so many mechanical and chemical processes, however, that take place to ensure the food we eat is digested and absorbed for use by the body. We might not realize just how complex and critical this body system is. Prepare to be amazed.

What will you learn in this unit?

- Describe the organization of the digestive system
- Explain the structure and function of the digestive system
- Discuss the six digestive processes and the digestive enzymes
- Describe diseases and disorders of the digestive system

Unit 4: The Urinary System

We might not enjoy speaking about the functions of the urinary system in our everyday lives, but this body system is critical to our health and to our body's ability to maintain homeostasis. It's important to understand the urinary system but also the important relationships between this system and others, such as the circulatory system. Did you know that the bladder can hold 1000 ml—or one whole liter—of urine?

What will you learn in this unit?

- Describe the organization of the urinary system
- Explain the structure and function of the urinary system at both a macro and micro level
- Compare and contrast the female and male urinary systems
- Explain how urine is formed and excreted from the body
- Describe diseases and disorders of the urinary system

Anatomy and Physiology 1B Midterm Exam

- Review information acquired and mastered from this course up to this point.
- Take a course exam based on material from the first four units in this course (Note: You will be able to open this exam only one time.)

Unit 5: The Reproductive System and Genetics

The differences between men and women enable us to create unique and precise human offspring. How can we predict what diseases individuals will have, and how specifically do human beings grow from being tiny cells of fertilization? It's truly fascinating to consider that

each of us exists based on odds similar to winning the lottery. When someone tells you that you're one in a million, you're actually going to respond, "no, I'm one in fifteen million." Read on to find out why!

What will you learn in this unit?

- Compare and contrast the organization of the male and female reproductive systems
- Explain the structure and function of the reproductive system
- Discuss genes and chromosomes from conception to birth
- Understand how a negative is used to create an image print
- Describe common diseases and disorders of the reproductive system

Unit 6: The Endocrine System

This is the last body system that you will explore in this course. Have you decided yet which one you feel is the most important? Which one, if it fails, will impact a person's life the most? Have you thought about whether breathing is more important than the message the brain sends to the lungs to perform the action of breathing? Is your decision firm? What if you now learn that there are two organ systems that work together more than any others to maintain homeostasis? Would this change your mind? In this unit you are going to learn about the intricate ways that the glands and organs of the endocrine system work with the nervous system to ensure that all the hormone, electrolyte, and fluid levels are kept in balance. After working through this unit, you'll be asked which is truly your favorite unit and the one that you believe plays the most important role in sustaining life.

What will you learn in this unit?

- Describe the organization of the endocrine system
- Explain the structure and function of organs of the endocrine system
- Explain how the endocrine system maintains homeostasis
- Describe diseases and disorders of the endocrine system

Unit 7: Assessing and Documenting Anatomy and Physiology

Have you ever read a journal or a personal memoir? Even a newspaper that recalls a series of events? If you have, you know that what makes them complete and informative is detail. The use of dates, times, and specific words helps the reader understand exactly what is being described by the author. A complete health assessment allows a healthcare provider to develop a full story or sequence of events that apply to a person's situation. The recording of this information on paper or electronically ensures that care can be provided in a consistent, safe way.

What will you learn in this unit?

- Identify purposes of a healthcare record
- Discuss legal guidelines for documentation
- Describe confidentiality and the laws that govern patient privacy

- Describe the different methods of data collection
- Conduct a health history
- Organize a basic body systems physical assessment

Unit 8: The Science & Technology of Anatomy & Physiology

You've already learned that anatomy and physiology courses are required for students who are beginning their journey to a career in health science or for individuals who want to improve their own health and wellbeing. Along this journey, you may have had questions about where it all began and what the proof is behind certain things that you read, or maybe you've even questioned why you would possibly need to know some of this material. This unit will bring you back to the beginnings of anatomy and physiology as a science and hopefully answer some of the remaining questions you have about why anatomy and physiology is important. You'll also explore more about the various healthcare careers that use anatomy and physiology as a foundational tool in their scopes of practice.

What will you learn in this unit?

- Describe the history of anatomy and physiology as a science
- Distinguish between the scopes of practice of various healthcare professions
- Differentiate between qualitative and quantitative research
- Discuss examples of different types of research studies that can advance the science of anatomy and physiology
- Illustrate the ways in which healthcare professionals work collaboratively

Anatomy and Physiology 1B Final Exam

- Review information acquired and mastered from this course up to this point.
- Take a course exam based on material from units five to eight in this course – the last four units. (Note: You will be able to open this exam only one time.)