

SY 2021-2022 Syllabus

Human Anatomy and Physiology

Christopher Brown

CC2590

Christopher.Brown2@hsv-k12.org

(256) 428-8000 ext. 2124

I. **Course Description:**

The Human Anatomy and Physiology course is designed to address the structure and function of human body systems from the cellular level to the organism level in an approach that complements the natural curiosity of high school students. The course addresses the interactions within and between systems that maintain homeostasis in an organism. It is designed for students who have an interest in learning how the human body works and for those interested in health-related science, technology, engineering, and mathematics (STEM) careers. As students engage in the study of human body systems, they are encouraged to apply the knowledge and processes of science to personally relevant issues, including how personal choices, environmental factors, and genetic factors affect the human body.

II. **Course Objectives:**

1st Nine Weeks

- 1.) Develop and use models and appropriate terminology to identify regions, directions, planes, and cavities in the human body to locate organs and systems
- 2.) Analyze characteristics of tissue types (e.g., epithelial tissue) and construct an explanation of how the chemical and structural organizations of the cells that form these tissues are specialized to conduct the function of that tissue (e.g., lining, protecting).
- 3.) Obtain and communicate information to explain the integumentary system's structure and function, including layers and accessories of skin and types of membranes.
 - 3.a.) Analyze the effects of pathological conditions (e.g., burns, skin cancer, bacterial and viral infections, chemical dermatitis) to determine the body's attempt to maintain homeostasis
- 4.) Use models to identify the structure and function of the skeletal system (e.g., classification of bones by shape, classification of joints and the appendicular and axial skeletons).
 - 4a.) Obtain and communicate information to demonstrate understanding of the growth and development of the skeletal system (e.g., bone growth and remodeling).

4b.) Obtain and communicate information to demonstrate understanding of the pathology of the skeletal system (e.g., types of bone fractures and their treatment, osteoporosis, rickets, other bone diseases).

2nd Nine weeks

5.) Develop and use models to illustrate the anatomy of the muscular system, including muscle locations and groups, actions, origins, and insertions.

5a.) Plan and conduct investigations to explain the physiology of the muscular system (e.g., muscle contraction/relaxation, muscle fatigue, muscle tone), including pathological conditions (e.g., muscular dystrophy).

6.) Obtain, evaluate, and communicate information regarding how the central nervous system and peripheral nervous system interrelate, including how these systems affect all other body systems to maintain homeostasis.

6.a.) Use scientific evidence to evaluate the effects of pathology on the nervous system (e.g., Parkinson's disease, Alzheimer's disease, cerebral palsy, head trauma) and argue possible prevention and treatment options.

6.b.) Design a medication to treat a disorder associated with neurotransmission, including mode of entry into the body, form of medication, and desired effects.

13.) Obtain, evaluate, and communicate information to support the claim that the endocrine glands secrete hormones that help the body maintain homeostasis through feedback loops.

13.a.) Analyze the effects of pathological conditions (e.g., pituitary dwarfism, Addison's disease, diabetes mellitus) caused by imbalance of the hormones of the endocrine glands.

3rd Nine weeks

7.) Use models to determine the relationship between the structures in and functions of the cardiovascular system (e.g., components of blood, blood circulation through the heart and systems of the body, ABO blood groups, anatomy of the heart, types of blood vessels).

7.a.) Engage in argument from evidence regarding possible prevention and treatment options related to the pathology of the cardiovascular system (e.g., myocardial infarction, mitral valve prolapses, varicose veins, arteriosclerosis, anemia, high blood pressure).

7.b.) Design and carry out an experiment to test various conditions that affect the heart (e.g., heart rate, blood pressure, electrocardiogram [ECG] output).

12) Obtain and communicate information to explain the lymphatic organs and their structure and function.

12.a.) Develop and use a model to explain the body's lines of defense and immunity.

12.b.) Obtain and communicate information to demonstrate an understanding of the disorders of the immune system (e.g., acquired immunodeficiency syndrome [AIDS], severe combined immunodeficiency [SCID]).

9.) Develop and use a model to explain how the organs of the respiratory system function

4th nine weeks

9.a.) Engage in argument from evidence describing how environmental (e.g., cigarette smoke, polluted air) and genetic factors may affect the respiratory system, possibly leading to pathological conditions (e.g., cystic fibrosis).

8.) Communicate scientific information to explain the relationship between the structures and functions, both mechanical (e.g., chewing, churning in stomach) and chemical (e.g., enzymes, hydrochloric acid [HCl] in stomach), of the digestive system, including the accessory organs (e.g., salivary glands, pancreas).

8a.) Obtain and communicate information to demonstrate an understanding of the disorders of the digestive system (e.g., ulcers, Crohn's disease, diverticulitis).

11.) Use models to differentiate the structures of the urinary system and to describe their functions.

11.a.) Analyze and interpret data related to the urinary system to show the relationship between homeostatic imbalances and disease (e.g., kidney stones, effects of pH imbalances).

10.) Obtain, evaluate, and communicate information to differentiate between the male and female reproductive systems, including pathological conditions that affect each.

10.a.) Use models to demonstrate what occurs in fetal development at each stage of pregnancy.

III. In-Person/Online Classroom Expectations:

Regular attendance is expected and necessary for this class. The district attendance policy will be strictly followed. If you are not in your assigned seat when the tardy bell rings, you are tardy. Students are expected to spend one hour of study time per night. Students are expected to study and prepare for classroom and end of course exam.

Online Video and Live Class Policies:

The Huntsville City Schools Code of Conduct applies to online behavior as well as in-person or classroom behavior. You are expected to be professional and respectful when attending class on online video and Live Class. The following are class policies for our meetings with Microsoft Teams. Please read carefully, these policies are effective immediately and apply for the year. All students are expected to adhere to the policies.

NOTE: Class meetings on Microsoft Teams (including video, audio, and chat text) will be recorded. Violations are subject to the HCS Student Code of Conduct and will be adjudicated accordingly.

General:

Sign in with your full first name and last name as listed in PowerSchool. Do not use a nickname or other pseudonym when you log in. It makes it impossible to know who is in attendance. Using your full name quickly sorts students into their groups when needed.

Exceptions:

Since enrolling in class, some students have changed their names to better reflect their gender identity. If you currently use a different name than what is listed on the official roster, please send me a private email/Schoology message so this can be noted on the roster, and you can use your current name on Microsoft Teams.

If you do not have access to a computer or smartphone with internet access, call into class using a landline phone. This is not optimal; please try to locate an internet-enabled device to use for class.

Stay focused. Please stay engaged in class activities. Close any apps on your device that are not relevant and turn off notifications.

If you need technical help, contact the IT Help Desk.

Video:

Turn on your video when possible. It is helpful to be able to see each other, just as in an in-person class.

Keep it clean. Don't share anything you wouldn't put up on the projector in class!

Exceptions:

If you have limited internet bandwidth or no webcam, it is ok to not use video.

If you're unable to find an environment without a lot of visual distractions, it is also ok to turn off your video.

Audio:

Mute your microphone when you are not talking. This helps eliminate background noise. Use a headset when possible. If you own headphones with a microphone, please use them. This improves audio quality.

Be in a quiet place when possible. Find a quiet, distraction-free spot to log in. Turn off any music, videos, etc. in the background.

Chat:

Stay on topic. Use the chat window for questions and comments that are relevant to class. The chat window is not a place for socializing or posting comments that distract from the course activities. If you fill it up with random comments, I will be unable to sort through the information quickly to address students' real questions/concerns about the course.

No disrespect or hate speech. Just like in our in-person class, respectful behavior is expected. Consider Microsoft Teams a professional environment, and act like you're at a job interview, even when you're typing in the chat.

IV. My Classroom Rules:

1. Follow all student handbook expectations.
2. No gum, food, or drinks, or sleeping in class.
3. Always stay seated and follow directions.
4. Be respectful and respect others.
5. Be on time and prepared.
6. Be Attentive.
7. Be Safe On-line.

V. Assignment Headings: Are required in the top right-hand corner of every in-person assignment.

Name
Date
Class
Period

VI. Daily In-person Routines:

1. Find your assigned seat when you enter the room and immediately get out your materials for class.
2. Start the "DO NOW" that will be posted on the board daily.

VII. Cell Phones:

Cell phones must be **OFF** during in person class times.

VIII. Cheating:

An automatic grade of **zero** will be given for any cheating on tests, copying others' work, talking, or having a cell phone turned on during tests. Parents will be contacted and Huntsville City Schools' policy will be followed.

IX. Huntsville City Schools Grading Distribution:

a. Grades are determined based on the following procedures:

Percentage	Grade Distribution
60% Standards Based Summative Assessments	Assessments that determine standards mastery
40% Formative Assessment and Assignments	In-class assignments/homework that directly reflect and support mastery of course standards

X. **Grading:**

Grades will be administered for the completion and mastery of such tasks as tests, homework assignments, class work, labs and projects. A points system will be used where students shall receive a designated number of points on an assignment. Points will be accumulated over the nine-week period and then the number of points that a student receives will be divided by the total number of points possible to determine the category average. Category averages will be added to comprise the nine-week average. Students are required to keep up with their own grades. Progress reports will be given to parents upon request. Grades will be posted regularly on Schoology and PowerSchool.

Categories:

60% of grade will be summative assessment, this includes performance based assessments, labs, projects, writing assessment, all of which directly reflect course standards

40% of grade will be in-class assignments /homework- assignments that reinforce daily standards and/or introduce standards

XI. **Classwork/Make-Up Work/Grade Recovery:**

Students have 2 days to complete any assignments before they are considered late. Late work will counted for half credit. Students can make-up any work missed because of an excused absence. It is the student's responsibility to consult for any assignments that were missed during the absence, as soon as they return to school. Students will be allowed to retake test to improve grades. Test grades will be averaged together to determine the new grade. Students must make arrangements to make up test.

XII. **Class Outline:**

1st nine weeks – Anatomy, Physiology, Tissue, Histology, Integumentary System, Skeletal System

2nd nine weeks – Muscular System, Nervous System, Special Senses, Endocrine System,

3rd nine weeks – Blood, Circulatory System, Lymphatic System, Respiratory System

4th nine weeks – Digestive system, Urinary System, Reproductive System.

XIII. **Required Materials:**

Students must have a laptop (fully charged or with charger), 3-prong binder/notebook, loose-leaf paper, pens (blue or black ink only), colored pencils, pencils, highlighter and earphones (for personal use).

XIV. **Suggested Materials:**

These materials are suggested and will be needed for class. Students are encouraged to bring one item from the list: paper towels, Clorox wipes, Hand sanitizer, Kleenex facial tissues.

XV. 2021-2021 Bell Schedule:

1st Block	8:30am-9:55am
2nd Block	10:00am-11:25am
3rd Block	11:30am-1:15pm
W.I.N.	1:20pm-2:10pm
4th Block	2:15pm-3:40pm

Human Anatomy and Physiology Signature Sheet

By checking this box and signing below I agree that I have read the Human Anatomy and Physiology Syllabus and I understand and accept the requirements that are outlined in this document. I am aware that homework assignments are required and that consistent study time should be planned.

Student Name (print): _____

Student Signature: _____

Date: _____

Parents I am available for parent conferences by appointment. Communicating via e-mail is best.

Please read the course syllabus with your child, sign the following detachable portion and return it to me by your child. Thank you.

Parent/Guardian

Name (print): _____

Parent/Guardian

Email (print): _____

Parent/Guardian Signature: _____

Date: _____