Welcome to the Window Rock High School Human Anatomy and Physiology (A&P) course. The A&P course will help students understand the structure, organization, and function of the human body in order to apply this knowledge in all health–related fields. Students will investigate concepts of homeostasis and the essentials of human function at the level of genes, cells, tissues, and organ systems. Through instruction, which will include laboratory activities, students will apply these concepts associated with Human Anatomy and Physiology.



**Required Prerequisite:**

Biology

**Recommended Prerequisites:**

Chemistry

**Recommended Grade Level:**

11th and 12th

**Required Knowledge base:**

Students should know the principles of atomic structure, bonding, molecules, and structural formulas, types of chemical reactions, principles of acids and bases, and molarity.

**Recommended Lab knowledge base:**

Students should be able to use basic laboratory equipment such as microscopes, balances, and pipettes. The course should include ample laboratory experiences that illustrates and applies to knowing the appropriate cells, tissues, organs, and organ systems. Dissection is both appropriate and necessary, but will be affected by the availability of appropriate laboratory equipment.

**Window Rock High School Anatomy and Physiology Unit topics:**

*Unit Description*

1. **Body Plan and Organization**: Students will explore careers in health care and describe the body plan and organization and homeostasis.
2. **Basic Principles of Body Chemistry**: Students should explain how we control the salt content and volume of the fluid that surrounds the cells of our bodies and why this control is necessary. Students should be able to explain why it is necessary to control the pH of the fluids in our bodies.
3. **Cells, Histology, and Integumentary Systems**:Students should understand that molecules make up the fabric of living cells, which, in turn, make up tissues.
4. **Skeletal System**:Students know the physiology and structure of bones and skeletal muscle as they interact to provide movement and support of the human body. Students understand the chemical and microscopic structure of bone; its development, repair, turnover and growth; and its ability to heal when damaged.
5. **Muscular System**: Students know the physiology and structure of bones and skeletal muscle as they interact to provide movement and support of the human body. Students understand the chemical and microscopic structure of bone; its development, repair, turnover and growth; and its ability to heal when damaged.
6. **Nervous System**: Students recognize that the nervous system, together with the endocrine system, controls and integrates the workings of the human body. Students recognize that nerve cells are the functional cellular units of the nervous system and that their activity calls for rapid transmission of information along their axons as well as an ability to network by "talking" to other nerve cells.
7. **Endocrine System**: Students understand the structure and function of the endocrine system in relation to digestion and metabolism, homeostasis, survival, growth, development, and reproduction
8. **Blood, Lymphatic, and Cardiovascular System**: Students understand the functions of blood including its role in essential protection to combat invading microorganisms, acute inflammation, and immune responses. Students should understand the role of the lymphatic system in the body’s defense against marauding pathogens. Students recognize the anatomy and function of the heart and blood vessels.
9. **Respiratory System**: Students should understand why it is necessary to breathe. They should understand how breathing is controlled, how the mechanical aspects of the breathing processes occur, and how ventilation of the lungs changes in response to changes in blood oxygen, carbon dioxide, and pH.
10. **Digestive System**: Students should be able to define the digestive system and to state the structures, regulators, and functions of its primary and accessory structures and organs.
11. **Urinary System**: Students should understand the microscopic and macroscopic anatomy of the renal system. Students should understand the function of the kidneys in relation to homeostatic control of bodily fluids, blood pressure, and erythrocyte production.
12. **Reproductive System**: Students should understand the anatomy of the male and female reproductive systems. They should understand the function of the hormones of male and female gonads, their cell origins and their functions.

**Textbook:** Essentials of Human Anatomy & Physiology, 12th Edition by Marieb and Keller (2016)

**Coloring Book**: Anatomy & Physiology, A Complete Study Guide, 12th Edition by Marieb and Brito (2018)

**Required Student Materials:**

* Three-ring binder with dividers for a Portfolio.
* Calculator
* Paper; ruled and graph
* Pencils and/or blue/black pens (other colored ink will not be allowed)
* Colored pencils

**Grading will be calculated using the following scale for each assessment category:**

1. Class Assignments (**30%**):  class participation, vocabulary study, science math, group work, laboratory experiments, observation mini-labs, chapter review questions, homework, worksheets, and class notes.
2. Unit tests and quizzes (**24%**): The science performance standards of the quizzes will be designed to prepare students for standardized tests.
3. Science RACES Writing Assignments (**10%**): Science and/or Health articles and research paper.
4. Science Math Assignments (**8%**): Adding, subtracting, multiplying, and dividing data, creating graphs, comparing numbers, differentiating normal from abnormal values,
5. Data Folders, Continuous Improvement (**8%)**: maintain Portfolio data, completing and understanding SOAR documents and reflecting on understanding and planning
6. Semester Final (**10%**): Comprehensive written final or Portfolio presentation.

**Portfolio** – Students will have the option of organizing an HAP Portfolio in lieu of the written semester final exam. It will be organized in: Table of Contents, Introduction activities, Unit Activities (including class assignments, tests/quizzes, science writing, and science math), Research paper, Portfolio rubric, and Public comments. The Portfolio will be presented in a folder, binder, or digital format. The portfolios will be due or grading on the Friday before Finals week. Should a student fail the Portfolio evaluation, then they will have to take the written Semester final exam.

**Class Expectations**

1. Students should be in seats when the bell rings. The school’s tardy policy will be enforced.
2. Bell Work. Students will answer the daily bell work questions as soon as they enter the classroom.
3. Students are expected to maintain their class **data folders**. The data folders will document the student’s personal class progress and grades for each grading scale listed above.
4. Late work, for other than absences, will not be accepted once the deadline has lapsed. An absence does not excuse a student from a class assignment or quiz. **If a student is absent**:
	1. It is the student’s responsibility to acquire the make–up work from the teacher.
	2. If absent on the day of a quiz, students will take it immediately on the day of return.
5. Disruptive behavior that distracts anyone from learning will not be tolerated.
6. All school rules, policies, and procedures listed in the Student Handbook are in effect in the classroom.

I am more than willing to help you be successful in this class. I am willing to give you individual help at the following times listed below. Please come and talk to me if you are having trouble.

1. Mondays through Thursdays after school from 3:30 to 5:00 pm in room C18.
2. My planning period is during the period. This is the best time for parent phone calls.
3. Please feel free to email me at [**www.mbarton@wrschool.net**](http://www.mbarton@wrschool.net) or call me at school (at 928-7055 and I will return your call as soon as possible.

Student:

1. I have read the syllabus and understand its content.
2. I understand that there will be Biology assignments requiring an email address (such as login onto an Canvas account to take a quiz or download handouts from the Teacher’s Google Drive account) and will give the teacher a contact email address for these Biology class assignments.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Student Name Signature Date*

Student’s email \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Not all students will be given a textbook because of the limited number of available textbooks. A Virtual textbook will be made available through Google Drive for all students.

Parents:

1. I have read the syllabus and understand its contents.
2. I also understand that if the teacher wants to contact the parent, I will provide my contact information.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Parent name Signature Date

Parent’s email \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Parent phone or cell number during school hours: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Parents, please use the space below, and if necessary the back of this sheet, for any comments on the syllabus or any other concerns that are important for me to know and understand. Thank you.