

Crook County School District

where students dream, learn, & succeed



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<u>Course</u> : Anatomy Bio 231 & 232		<u>Email</u> : jessica.mumm@crookcountyschools.org
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☐	Trimester #2	<u>Methods for Communicating with Families:</u> • Email • Phone Call • Google Classroom • Class Website
☒	Trimester #3	

If you do not qualify for credit cost coverage, your cost will be: High School Dual Credit taken from your high school – \$40 a credit

Course Description:

BIOL 231 - Fall

Introduction to the principles of human anatomy and physiology (first of a three-course sequence). This course covers anatomical terminology; an overview of the chemical, cellular, and tissue levels of organization; nervous, and skeletal systems. The dogfish shark is used as an anatomical model and the student and other organisms are used for the physiological portion of the laboratory segment of this course.

Learning Outcomes:

- 1) This course is designed to help the student learn the facts, concepts, and principles of human anatomy and physiology
- 2) This course should prepare the student for advanced courses in both anatomy and physiology
- 3) This course is designed to help students learn to think critically about topics in anatomy and physiology, through stimulating questions, discussions, and writing..

BIOL 232 - Spring

Principles of human anatomy and physiology II. This course covers the anatomy and physiology of the blood, muscle, respiratory, and digestive systems; and metabolism. The cat is used as an anatomical model and the student and other organisms are used for the physiological portion in the laboratory segment of this course. Prerequisite: BIOL 231.

Learning Outcomes:

- 1) This course is designed to help the student learn the facts, concepts, and principles of human anatomy and physiology
- 2) This course should prepare the student for advanced courses in both anatomy and physiology
- 3) This course is designed to help students learn to think critically about topics in anatomy and physiology, through stimulating questions, discussions, and writing..

Learning Standards/Targets:

NOTE: It is anticipated that the student's mastery of these learning outcomes will be reflected in the grade a student has received; an A student will have mastered all or most, while a C student will have mastered proportionately less, and a D/F student will show little or no mastery of these outcomes.

Brief Outline of Bio 231:

Lecture Schedule

lecture chapter 1 - Intro to AP

Chapter 4 - Metabolism

Chapter 5 - Histology/Tissues

Chapter 6 - Integumentary System

Chapter 7 - Skeletal System

Laboratory Schedule

Histology Tissue Analyzation

Model creations

Life Size Model and Label

Brief Outline of Bio 232:

Chapters 10-11- Muscular System

Chapters 12-15 - Nervous System

Chapters 18-20 - Cardiovascular System

Brain Dissection

Heart Dissection

Mink Dissection

Units Covered: (Both Terms)

1. Introduction: Homeostasis and Organization of the Body

- Define, in order from simplest (chemical) to most complex (organismal), the major levels of organization in the human organism.
- Locate various organs in the body using the basic anatomical terms for body position (anterior/posterior, supine/prone), direction (superior/inferior, lateral/medial, proximal/distal, superficial/deep), plane (sagittal/frontal/transverse), and compartments (dorsal/ventral).
- Utilize both systemic and regional approaches to relate gross anatomical structures and their functions.
- Define homeostasis and describe the multiple levels of homeostatic maintenance in physiology.
- Compare and contrast positive and negative feedback in terms of the relationship between stimulus and response.
- Relate breakdowns in homeostasis to pathological presentations of the various body systems.
- Identify the different tissue types (nervous, muscle, connective, epithelial, and membrane) by microscopic methods.
- Explain how the cells and forms of the tissues contribute to their function in the body.

2. Integumentary System/Histology

- Identify the layers of tissues.
- Recognize the shapes and structures in each type of tissue.
- Identify the difference between epithelial, muscle, and nervous and connective tissues.
- Define histology
- Explain the accessory structures of skin and why they are important.
- Explain how wounds and burns heal.
- Explain how does the life span of cells change.

3- Endocrine System

- Identify on models the major components of the endocrine system by their anatomical names and describe their functions. To include: hypothalamus, pituitary gland, thyroid, parathyroid, adrenal gland, pineal gland, and pancreas.

- Compare and Contrast primary vs secondary endocrine organs and hormones.
- Describe the mechanisms of hormone action and the role hormones play in body functions.
- Categorize hormones by the organ in the body where they are produced, either by the hypothalamus, anterior lobe of the pituitary gland, posterior lobe of the pituitary gland, thyroid, parathyroid, pineal or adrenal glands.
- For each hormone, identify the major functions in the body.
- Describe the location and function within the pancreas of pancreatic islets, and identify the hormones they produce.
- Explain how pancreas hormones control blood glucose levels.
- Explain how hormones regulate the stress response.
- Relate various pathological responses to hyper or hypo production of hormones in the endocrine system.

4. Nervous System

- Identify the major components of the nervous system by their anatomical names and describe their functions. To include: neurons, nervous tissue, neurotransmitters, the spinal cord, the brain,
- Describe the composition and location of nervous tissue.
- Describe the parts of a neuron and their locations on the neuron.
- Differentiate the structural types of neurons.
- Describe the types of neuroglia and their functions.
- Explain how resting and action potentials contribute to nerve function.
- Describe the process of neurotransmission.
- List the major neurotransmitters and describe their functions.
- Locate and identify on models the spinal cord and its meninges, the cross-sectional structures of the spinal column, and spinal nerves and nerve plexuses and the structures they innervate.
- Describe the distribution and function of gray and white matter in the spinal cord.
- Explain how sensory signals and motor commands are relayed through the spinal cord and spinal nerves.
- Explain what a dermatome is and identify skin regions innervated by each spinal nerve.
- Describe the somatic reflex arc.
- Locate and identify on models anatomical regions, ventricles, and blood vessels of the brain and the surrounding protective structures.
- Classify structures of the brain by location in the brain stem, cerebellum, diencephalon, limbic system, or cerebrum, and describe their functions.
- Locate and identify functional regions of the cerebral cortex.
- Locate and identify the 12 paired cranial nerves by name and number.
- Differentiate the locations and structures of cranial nerves that transmit special sensory signals vs motor signals or do both.
- Map the pathway and functions of each cranial nerve.
- Describe the structures and functions of the somatic and autonomic nervous systems.
- Describe the sensory and motor pathways of the somatic nervous system including structures of somatic sensation and motor functions.
- Describe the roles of the basal ganglia and cerebellum in somatic nervous system function.
- Compare and contrast the roles of the sympathetic and parasympathetic nervous systems.

5. Musculoskeletal System (Muscular and Skeletal)

- Identify on models the major components of the musculoskeletal system by anatomical name. To include: axial and appendicular bones, muscles, and joints.

- Describe the functions of the axial and appendicular skeletal system (protection, movement, hearing, childbirth accommodation)
- Describe how the muscular and skeletal systems interact (importance of bone markings) and how the muscular system can act independently to allow: movement, peristalsis through various tubes, speech, heartbeat, sphincter control, blinking, swallowing, and various reflex actions
- Describe how both the cartilaginous and bony skeleton in humans play important roles
- List the three types of muscle tissue (smooth, cardiac, striated), where they are found, and how they function with or without conscious control
- Visually describe the sequence of events from neuronal stimulation that lead to muscle contraction, control its strength and duration, and allow its cessation

6- Cardiovascular System

- Identify the components of blood
- Explain Hemostasis
- Understand ABO blood types
- Identify and label the anatomy of a heart
- Explain the physiology of the heart
- Identify and describe the blood vessels.

Sheep Heart Dissections

Instructional Materials:

- Core Texts: The primary text for this course is the Open Source textbook Anatomy & Physiology found at: <https://openstax.org/details/books/anatomy-and-physiology-2e>
- Films, Videos/Other Electronic Media: Crash Course Biology-Anatomy PlayList, Khan Academy videos, virtual dissections, virtual microscope slides (online), & Elec2ric Learning Anatomy-related videos (YouTube)
- Novels: N/A
- Other Supplementary Curriculum (Articles, etc.): Current Event articles pertaining to the body system being studied at that time. (Selected from science journals)
- Planned Guest Speakers: N/A

All Instructional Materials must comply with CCSD School Board [Policy IIA](#) & [Policy IIA-AR](#). A copy of core and supplemental curriculum will be available in the curriculum office for review.

A classroom teacher receiving a complaint regarding instructional materials shall try to resolve the issue informally through the discussion of the original assignment or the opportunity for an alternative assignment.

Notification of the Right to Object to the Use of Material:

Any resident of the district may raise objection to instructional materials used in the district's educational program despite the fact that the individuals selecting such materials were duly qualified to make the selection and followed the proper procedure and observed the criteria for selecting such material.

The first step in expressing objection to materials is consultation with the classroom teacher or library staff and providing a written complaint. The district official or staff member initially receiving a complaint shall explain to the complainant the district's selection procedure, criteria and qualifications of those persons selecting the material. A classroom teacher receiving a complaint regarding instructional materials shall try to resolve the issue informally through the discussion of the original assignment or the opportunity for an alternative assignment. The materials shall remain in use unless removed through the procedure in section 4. F. (2) of this regulation.

The teacher or library staff receiving the initial complaint shall advise the principal of the initial contact within 24 hours, whether or not the complainant has apparently been satisfied by the initial contact. A written record of the contract shall be maintained by the principal and sent to the superintendent's office.

In the event that the person making an objection to material is not satisfied with the initial explanation or an alternative assignment, the person raising the questions will meet with a building administrator who will provide a Request for Reconsideration form.

For more details, see [CCSD School Board Policy IIA-AR](#).

Citizenship, Classroom Rules, Behavior Expectations:

- *The Board expects student conduct to contribute to a productive learning climate. Students shall comply with the district's policies, administrative regulations, school and classroom written rules, pursue the prescribed course of study, submit to the lawful authority of teachers and school officials and conduct themselves in an orderly manner during the school day and during district-sponsored activities.*

Careful attention shall be given to procedures and methods whereby fairness and consistency without bias in discipline shall be assured to each student. The objectives of disciplining any student must be to help the student develop a positive attitude toward self-discipline, realize the responsibility of one's actions and maintain a productive learning environment.

- See [CCSD Board Policy JFC](#) for more details.

Class Expectations

- *Students are expected to be present and active members of the classroom every day.*
- *Students are expected to come to class prepared with all necessary materials and completed assignments to learn and participate in all lectures and activities.*
- *Students are expected to be respectful of the teacher, the classroom, and their peers.*

Class Discipline

Students who are not acting present, coming prepared, and being respectful will earn one of the following consequences:

- *Warning in class*
- *Teacher/Student conference during or after class AND parent contact*
- *Lunch detention AND parent contact*
- *Written referral and sent to the office during activity/lab AND parent contact*

Any student caught cheating on an assignment will receive a zero and be referred to the Principal. There will be a makeup assignment created in the case of cheating, that will need to be completed to make up for the assignment/assessment that the student was caught cheating on.

As this is an Honors class:

*CCHS places a high value on the integrity of its student scholars. In addition, realize that all work you turn in **MUST** be your original work. All answers and writing must be your own. Any writing you include that was not yours from any source must be in quotations and attributed to the original author. I expect however that you will not use other's words but your own. If you read something that can answer a question, use your own words to explain that answer. Any use of wording, be it a paragraph, sentence, or phrase, from another's work, is considered plagiarism and will result in academic misconduct, a failing grade on the assignment, and potentially a failing grade for the course. **Do not plagiarize!***

Grading System:

- *The district's grading system shall be based on Board-adopted course content and is designed to enable the student and parent to clearly know how well the student is achieving course requirements at the student's current grade level or course content level, and be based on the student's progress toward mastery of a continuum of knowledge and skills outlined in Oregon State Standards. Absenteeism or misconduct shall not be the sole criterion for the reduction of students' grades. Behavioral performance shall be reported separately. The district will use letter grades (A,B,C,D,F) that can be converted into a 4 to 0 reporting system in grades 6-12. All AP courses are graded on a 5.0 grading scale.*
- *Grades will be based on many factors, such as: basic instructional assignments, both oral and written; results from various assessment instruments, including critical content short cycle assessments as well as quizzes and exams; class participation; special assignments; research; activities of various types of kinds and special contributions.*
- *See CCSD School Board [Policy IKA](#), [Policy IK](#), & [Policy IK-AR](#) for more details.*

Grading Scale:

- A+: 100-98 A: 97-93 A-: 92-90
- B+: 89-88 B: 87-83 B-: 82-80
- C+: 79-78 C: 77-73 C-: 72-70
- D+: 69-68 D: 67-63 D-: 60-62
- F: 59-0

Course Grading Criteria/Weighting

- Assessment, Projects, Quizzes, Assessments of Learning Standards: 80% → (50% Tests, 20% Labs, 10% Projects)
- Daily Homework & Practice Assignments: 20%

Grades will be derived from a combination of the following:

• Daily Openers → These are graded daily, and a weekly total gets put into the gradebook. The openers can be corrected up until Friday each week. The openers will be deleted as the total scores are entered into the gradebook. AGAIN YOU HAVE UNTIL FRIDAY OF EACH WEEK TO FIX AND COMPLETE OPENERS.

- Daily Assignment/Homework
- Lab Work
- Projects
- Presentations
- Quizzes
- Exams → **Exams can NOT be retaken for college grades but can be for your high school grade.**
- Class Participation
- Etc.

AS THIS IS A COLLEGE COURSE:

- You will have two grades: one for high school and one for college.
 - Your high school grade consists of everything we do and you can retake assessments to improve your grades.
 - Your college grade consists ONLY of your exam scores and you can NOT retake assessments to improve your grade.

**[Policy IK-AR](#): Achievement of learning standards will be assessed separately from behavior.*

Make Up Policy:

- 1) **Assessment Retakes:** [Policy IK-AR](#) Teachers will provide students with multiple opportunities to demonstrate mastery of each standard. Students will be provided with at least two opportunities to retake assessments. A student who retakes an assessment will not be penalized. Teachers can modify assessments (more rigorous to account for greater time allowed for preparation.) Teachers will determine student requirements for assessment retakes that align with Policy IK-AR.
- 1) **Homework/Daily Work:** Achievement of learning standards will be assessed separately from behavior (i.e. attendance, disruption, late work, tardiness, preparation, effort, attitude, etc.). Teachers may set guidelines around submission timelines, as this category is tied to learning progress, please refer to policy IK-AR. → Students will have 2 weeks from the due date of an assignment to turn in the assignment for credit. **There is a 10% deduction on late work, as this is a college course and is designed to be rigorous.**

**For all courses that articulate with a college or university, it is required that the syllabi match the accrediting institution, rather than the CCSD syllabus model.*

Student Name: _____

Student Signature: _____

Parent Signature: _____