



**KENOSHA UNIFIED SCHOOL DISTRICT NO. 1
CURRICULUM AND INSTRUCTIONAL SERVICES**

**COURSE SYLLABUS FOR HUMAN ANATOMY &
PHYSIOLOGY-HONORS (423221 & 423222)**

Number of Credits: 1 Cr. **Locations:** Bradford and Tremper

Prerequisites: Successful completion of Biology or Biology Honors and Chemistry or Chemistry-Honors

Course Description

Human Anatomy and Physiology Honors explores the systems comprising the human body by emphasizing physiological mechanisms and a thorough understanding of human anatomy. An emphasis is placed on the interrelatedness of such systems as the skeletal, muscular, nervous, and circulatory. This course is recommended for those pursuing a career in the health science field. This course has a substantial laboratory component, including a fetal pig dissection.

Course Standards

Standard A: Science Connections

Standard B: Nature of Science

Standard C: Science Inquiry

Standard F: Life and Environmental Science

Standard G: Science Applications

Standard H: Science in Social and Personal Perspectives

Most Essential Benchmarks may be viewed at: www.kusd.edu

Lifelong Learning Standards

- Knowledgeable person
- Effective communicator
- Quality producer
- Complex thinker
- Self-directed learner
- Contributing citizen

Lifelong learning benchmarks may be viewed at: www.kusd.edu.

Course Outline

1. Introduction Human Body
 - Overview of organ systems
 - Directional and regional terms
 - Cavities and planes
 - Homeostasis and negative and positive feedback systems
 - Life processes
2. Tissues and Integumentary System
 - Cell membranes, transport and junctions
 - Structure, function and locations of epithelial, connective, muscle and nerve tissues
 - Microscopic identification of tissue types
 - Structure and function of skin, (layers and accessory organs)

- Growth, repair and pigmentation of skin
3. Skeletal System
 - Functions of skeletal system
 - Anatomy of long bone
 - Bone histology
 - Naming all bones of axial and appendicular skeleton
 - Formation, growth and repair
 - Structural and functional classification of joints
 - Types of movement
 - Calcium homeostasis
 4. Muscular System
 - Functions of muscular system
 - Names of all major muscles
 - Origin, insertion and action
 - Sliding Filament Model
 - Neuromuscular junction
 - Structure (gross and microscopic)
 - Physiology of muscle contraction
 - Muscle metabolism (ATP)
 - Fiber types
 5. Cardiovascular System
 - Functions of circulatory system
 - Heart structures (chambers, valves, vessels)
 - Circulatory routes (systemic, pulmonary, coronary and hepatic portal)
 - Blood vessels and pressure
 - Blood components, function and typing
 - Blood clotting
 - Regulation and conduction (EKG)
 6. Lymphatic/Immune System
 - Functions of lymphatic system
 - Structures (vessels, nodes, cells)
 - Lines of defense
 - Humoral immune response
 - Cell mediated immune response
 - Immune cell types
 - Disease/AIDS
 7. Digestion and Nutrition
 - Functions of digestive organs
 - Modes of mechanical digestion
 - Chemical digestion (hormones, enzymes, pH)
 - Absorption and elimination
 - Name parts of GI Tract and accessory organs
 - Nutrition and metabolism (production of ATP)
 - Biological polymers

- Hydrolysis and dehydration synthesis
- 8. Excretory System
 - Functions of urinary system
 - Kidney, ureter, bladder, urethra
 - Microanatomy and function of nephron
- 9. Respiratory System
 - Functions of respiratory system
 - Anatomy of respiratory tract
 - Mechanics and regulation of breathing
 - Gas exchange and gas laws
- 10. Nervous System
 - Functions of nervous system
 - Nerve cell anatomy
 - Neural physiology (action potential, synaptic transmission, Na/K pump)
 - Brain anatomy and hemispheres
 - Spinal cord anatomy, reflex arc
 - PNS (autonomic and somatic)
 - Sensory motor nerve functions
 - Sensory organs
- 11. Endocrine System
 - Functions of endocrine system
 - Naming organs/glands/cells and their hormones
 - Hormone types and target cells
 - Homeostasis and feedback loops
 - Chemical messengers
- 12. Reproductive System
 - Functions reproductive systems
 - Male and female anatomy
 - Menstrual cycle
 - Meiosis/gamete production

Board-Approved Instructional Materials

Marieb, Elaine N. and Katja Hoehn (2007). *Human Anatomy & Physiology, (7th Ed.)* Pearson-Benjamin Cummings.

Resources for Parents:

Methods of Assessment

Final exams should be cumulative in nature, emphasizing the most essential benchmarks for the course. Results of the final exam represent 20 percent of the final grade, but this single measure *may not* drop a student's grade by more than one letter grade. In courses that rely heavily on a major project, performance exhibition, etc., the project should be divided into stages or components and each of those should be graded separately, providing students with frequent and specific feedback.

Board-Approved Grading Scale

Excerpts taken from School Board Rule 6452

GRADING SCALE

A+=98-100 percent	B+=86-89 percent	C+=76-79 percent	D+=66-69 percent
A=93-97 percent	B=83-85 percent	C=73-75 percent	D=63-65 percent
A-=90-92 percent	B-=80-82 percent	C-=70-72 percent	D-=60-62 percent
			F=0-59 percent

MAKE-UP WORK

Students submitting work up to ten school days late without prior approval may receive up to two grades lower on the work than they would have received if the work had been submitted on time (i.e., B+ lowered to a D+). Student work submitted after ten school days without prior approval shall not be accepted for credit and shall be recorded with a score of zero.

Upon returning to school after an absence, a student has the responsibility within the number of days equal to the length of the absence or suspension to meet with the teacher to develop a plan for making up missed work, quizzes, and examinations. A truant student has the responsibility on the first day he or she returns to the course/class to meet with the teacher to develop a plan for making up missed work, quizzes, and examinations. Lower grades may not be given for late work due to excused absences, suspension, or truancy unless the work is submitted later than agreed upon deadlines.

See Rule 6452 in its entirety at: www.kusd.edu.