

**ARTICULATION AGREEMENT**

**DATE DRAFTED:** December 2, 2020

**VALID ACADEMIC YEAR(S):** 2020-21 & 2021-22

**LMC COURSE:** BIOSC-030 Introduction to Anatomy and Physiology

**HIGH SCHOOL COURSE:** Anatomy & Physiology

**School:** Heritage High School

**Address:** 101 American Ave., Brentwood, CA 94513

**A. COLLEGE COURSE DESCRIPTION:** This course is designed to cover basic anatomy and physiology. Fundamentals of body structure and function and the elegant interrelationships between body organs and how they perform will be explored. All of the systems of the body, including very basic microscopic anatomy and simple physiological chemistry will be covered in this one semester course.

**B. UNITS:** 4

**C. PRE-REQUISITES:** NA

**D. REQUIRED CONTENT FOR ARTICULATION:**

Content areas covered in the one year course:

1. Introduction to Anatomy and Physiology
  - a. The Birth of Modern Medicine
  - b. Inductive and Deductive method of study, Experimental Design, Peer Review
  - c. Anatomical Positions and Planes, Terminology for directional terms, body cavities and regions.
  - d. Homeostasis and feedback loops
  - e. Organ systems overview
2. Biochemistry Review
  - a. Review of atoms, molecules
  - b. Metabolism, Catabolic and Anabolic reactions in the body
  - c. Membrane Transport concepts, Osmosis and Diffusion
  - d. Protein structure and Enzyme
  - e. Major, Minor and Trace Elements
  - f. Macromolecules (Carbohydrates, Lipids, Proteins, Nucleic Acids)
3. Integumentary System
  - a. Skin Structure and Organization of skin layers
  - b. Histology of Epidermal, Dermal and Hypodermal skin cells
  - c. Glands, Hair, Nails, and Skin Disorders
  - d. Skin Cancer
4. Tissues and Organs of the Skeletal System
  - a. Histology and Organization of Bone cells
  - b. Physiology of Osseous Tissue
  - c. Bone Development
  - d. Bone Disorders
5. Skeletal System
  - a. Anatomical Features of Bone

- b. Skull bones
  - c. Appendicular Bones
  - d. Hip, Vertebral, and Thoracic Bones
6. Muscular System
- a. Anatomy and Histology of Muscles
  - b. Nerve Muscle Relationship, Sliding Filament theory of Muscle Contraction
  - c. Whole Muscle Behavior
  - d. Muscle Metabolism
  - e. Naming muscles, Muscles of the Appendicular Regions
  - f. Muscles of the Trunk
  - g. Muscles of the Head, Neck, and Face.
7. Nervous System
- a. Nervous Tissue Organization, CNS, PNS, and Autonomic Systems
  - b. Anatomy and Histology of Nervous Tissue
  - b. Histology of Supporting Nervous Tissues
  - c. Nerve Regeneration
  - d. Synaptic Action of Nerves
  - e. Spinal Cord Structure, Organization and Physiology
  - f. Brain Structure, Organization and Physiology
  - g. Disorders of the Nervous System
8. Sensory Organs
- a. Properties and Types of Sensory Receptors
  - b. Sense of Touch and General Senses
  - c. Chemical Senses of Taste and Smell
  - d. Hearing and Equilibrium and Vision
  - e. Projection Pathways for the above Senses
9. Endocrine System
- a. Overview of the Endocrine System
  - b. Glands, Hormones, and their Actions
  - c. Stress and the Endocrine System
  - d. Disorders due to Endocrine Malfunctions
10. Circulatory System
- a. Gross Anatomy of the Heart
  - b. Anatomy and Physiology of the Major Veins and Arteries
  - c. Capillary Exchange
  - c. Blood Pressure and its Control
  - d. Cardiac Conduction System and Cardiac Muscle
  - e. Cardiac Cycle, Cardiac Output and VO<sub>2</sub>Max
  - f. Electrocardiogram (ECG/EKG)
11. Respiratory System
- a. Gross Anatomy of the Lungs
  - b. Gas Exchange and Transport
  - c. Pulmonary Capacity
  - d. Respiratory Disorders
12. Urinary System
- a. Functions of the Urinary System
  - b. Anatomy of the Kidney
  - c. Physiology of Glomerular Filtration
  - d. Tubular Resorption and Secretion and Water Homeostasis
  - e. Acid-Base and Electrolyte Balance
  - f. Urine Formation

13. Digestive System
  - a. Anatomy of the Digestive Processes
  - b. Pathway and Physiology of Digestion from Mouth, Esophagus, Stomach, Liver, Gallbladder, Pancreas, Small and Large Intestines.
  - c. Functions of Acids, Bases, Enzymes and Bacteria in the digestive Processes
14. Lymphatic and Immune System
  - a. Components of the Non-Specific Immune Response
  - b. Cellular and Humoral Immunity
  - c. Immune System Disorders
15. Reproductive System
  - a. Basic Anatomy of male and female Reproductive Organs
  - b. Physiology of Hormone Roles in Various Ages

**E. REQUIRED COMPETENCIES (PERFORMANCE OBJECTIVES) FOR ARTICULATION**

HHS Anatomy and Physiology is a lab based course dedicated to the study of human body systems. Students will through lecture, experimentation, projects, and inquiry, develop an understanding of the structures and functions of human organ systems. Students will learn gross and microscopic anatomy which will lead to understanding the relationships between the anatomy and the physiology of the human body. Students will:

- Learn gross and microscopic anatomy
- Understand the relationships between anatomy and the physiology of the human body.
- Learn simple physiological chemistry

**F. METHODS FOR END OF COURSE ASSESSMENT:**

**Grades:**

Test and Quizzes	70%
Work	30%
A	90 – 100
B	80 – 89
C	70 – 79
D	60 – 69
F	59 and Below

\* A semester grade of “A” will relieve you from midterm/final

**G. TEXTBOOKS OR OTHER SUPPORTING MATERIALS**

- Human Anatomy & Physiology, 11th ed, Elaine N. Marieb, ISBN 0-13-476630

#### H. PROCEDURES AND/OR CRITERIA FOR COURSE ARTICULATION:

- a. Complete the Anatomy & Physiology class at Heritage High School with a grade of “B” or better.
- b. Receive a “B” or better on the agreed upon college/high school final exam\* procedure.
- c. Be recommended for credit by your high school teacher.
- d. Apply for admission at Los Medanos College.
- e. Register for CATEMA for electronic submission of college credit **OR** obtain copy of high school transcript and articulation agreement and submit to the LMC Office of Admissions & Records **within the academic year in which credit was earned.**
- f. Upon completion of the above, the student will receive on his/her LMC and CCCCD (California Community College District) transcripts the units of credit for LMC’s **BIOSC-030 Introduction to Anatomy and Physiology** course.

*\*College transcripts will reflect the **FINAL EXAM GRADE** earned and will be notated as **\*Credit by Exam.***

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**Address:** 101 American Ave., Brentwood, CA 94513

**COLLEGE SIGNATURES**

Natalie Hannum  
Natalie Hannum (Dec 8, 2020 16:56 PST)

Natalie Hannum Date  
LMC Vice President of Instruction

Ryan Pedersen  
Ryan Pedersen (Dec 8, 2020 16:41 PST)

Ryan Pedersen Date  
LMC Dean of Math & Physical Sciences

Roy "Kyle" Hanks

Roy "Kyle" Hanks Date  
LMC Biology Department Chair

James Clark  
James Clark (Dec 8, 2020 15:44 PST)

James Clark Date  
Faculty, Los Medanos College

**HIGH SCHOOL/ROP/DISTRICT SIGNATURES**

Carrie Wells  
Carrie Wells (Dec 9, 2020 08:32 PST)

Carrie Wells Date  
Principal, Heritage High School

Erik Faulkner  
Erik Faulkner (Dec 17, 2020 12:26 PST)

Erik Faulkner Date  
LUHSD Asst. Superintendent, Educational Services

Don Sanders  
Don Sanders (Dec 17, 2020 11:42 PST)

Don Sanders Date  
Faculty, Heritage High School












# HHS BIOSC-030 Articulation 2020-22


Final Audit Report

2020-12-17

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