

Course Title:	Equine Science I: Anatomy and Physiology
Grade(s):	11th/12th

Course Description
This course is designed to cover the anatomy and physiology of horses. The course will include an in-depth look into the skeletal, muscular, circulatory, respiratory, reproductive, and digestive systems. Topics to be covered include organs, their functions, diseases of the systems, system health checks, and maintaining organ system health. The course will provide a great deal of hands-on experience. Labs will include working with live animals, guest speakers, and field trips.
Approved Curricular Materials/Textbook(s)

Unit Title	Unit Description (Include Unit Objectives)	Unit Pacing
Unit 1: Skeletal System	This unit will cover the organs, tissues, and parts of the skeletal system. It will go into depth about the function of the skeletal system, the different types of bones, the skeletal anatomy of the horse, and compare the axial and appendicular skeletal system. The unit will also cover skeletal system maintenance of the horse and common diseases. Students will: • Label/Identify the bones of the equine skeletal system • Determine types of joints throughout the horse and how they work/function • Understand the diseases that commonly affect equine skeletal systems, how to treat them, and how to prevent them • Evaluate how the skeletal system affects a horse's athletic ability • Select horses for ideal conformation	4 weeks
Unit 2: Muscular System	This unit will cover the organs, tissues, and parts of the muscular system. It will go into depth about the function of the muscular system, the different types of	3 weeks

	muscles, the muscular anatomy of the horse, and compare the deep and superficial muscles of the system. The unit will also cover the muscular system maintenance of the horse and common diseases. Students will: • Label/Identify the muscles of the horse • Compare and contrast skeletal, cardiac, and smooth muscles • Compare and contrast deep and superficial muscles • Practice methods for maintaining a horse's muscular system • Understand the diseases that commonly affect equine muscular systems, how to treat them, and how to prevent them	
Unit 3: Respiratory and Circulatory Systems	This unit will cover the organs, tissues, and parts of the respiratory and circulatory systems. It will go into depth about the function of the cardiovascular system, its anatomy and physiology, how the systems function together, how to evaluate the systems, and how to maintain a healthy cardiovascular system. Students will: • Label/Identify the parts of the horse's respiratory system and explain their functions • Label/Identify the parts of the horse's circulatory system and explain their functions • Perform health evaluations on both the respiratory and circulatory systems • Explore how the systems interact with one another to allow the horse to be an exceptional athlete • Understand the diseases that commonly affect the equine cardiovascular system, how to treat them, and how to prevent them • Practice husbandry procedures to maintain cardiovascular health	4 weeks
Unit 4: Digestive System	This unit will cover the organs, tissues, and parts of the equine digestive system. It will go into depth about the function of the organs, the complexities of the system, explore equine colic, and cover how to manage metabolic diseases. Students will: • Label/Identify the organs of the equine digestive system and explain their functions	4 weeks

	• Explore the equine digestive tract's layout and capacities to better understand its complexities • Understand the diseases that commonly affect equine digestive systems, how to treat them, and how to prevent them • Explore types of equine colic and develop a plan to manage, treat, and prevent them	
Unit 5: Reproductive System	This unit will cover the organs, tissues, and parts of the reproductive systems of the horse. It will go into depth about the function of the reproductive system, compare and contrast mare and stallion anatomy and physiology, explore breeding cycles, and gestation and parturition of the horse. Students will: • Compare and contrast the organs of the mare's and stallion's reproductive systems and their functions • Explore the estrous cycle of the mare and how that affects breeding • Understand the diseases that commonly affect equine reproduction systems, how to treat them, and how to prevent them • Evaluate reproductive health in horses • Explore gestation and parturition in the horse	4 weeks