

heart sounds

8. Describe the histological structure of the heart wall and cardiac muscle tissue and how it differs from other muscle types both structurally and functionally
9. Define systole, diastole, stroke volume, and cardiac output.
10. Describe the cardiac cycle and the factors that control it.
11. Compare the structure, size, and function of arteries, arterioles, capillaries, venules, and veins.
12. Describe the blood flow through the hepatic portal system and discuss the importance of this system in the processing and storage of digested materials.
13. Distinguish between a capillary and a capillary bed
14. Trace a drop of blood from one location in the body to another (for example, from the inferior vena cava to the aorta) by listing in order all the major arteries and veins through which the blood would flow.
15. Define or describe the relevant terms from your text including:

systole	stroke volume	cardiac cycle	electrocardiogram	tunica intima
hypertension	cardiac output	myocardium	bicuspid valve	SA Node
chordae tendinae	hepatic portal sys	circle of Willis	aorta	AV Node

## Lymphatic System

1. List the major functions of the lymphatic system
2. Describe the lymphatic system's relationship to the cardiovascular and immune systems and its role in maintaining homeostasis.
3. Describe the differences in structure and function between lymph vessels and veins and between lymphatic capillaries and blood capillaries
4. Describe the distribution of lymphatic vessels and the flow of lymph through the body.
5. Describe the sources of lymph and its similarity and differences to plasma.
6. Describe the general location, histological structure, and function of lymph nodes
7. Describe the general location of the major organs associated with the lymphatic system.

## Body Defenses and Immunity

1. Describe the surface membrane barriers that help to prevent infection by pathogens.
2. Describe the functions of specific internal cells and chemicals involved in nonspecific defenses against disease.
3. Describe inflammation as a mechanism of nonspecific immunity, including vasodilation, increased vessel permeability, and phagocyte activity.
4. Describe the two mechanisms of specific immunity and the lymphocytes involved.
5. Describe the ways that antibodies act against antigens.
6. Define or describe the relevant terms from your text including:

natural killer cells	complement	humoral immunity	antibody	precipitation
lymphokines	inflammation	phagocytes	antigens	B-cells
plasma cells	passive immunity			
helper T-cells	allergies			

# Lecture Study Objectives: Exam IV

## BIOL 2404: Introductory ANATOMY AND PHYSIOLOGY

(Ziser, 2016)

The following is an outline of the core knowledge in BIOL 2404. After completing each topic below you should be able to:

### The Endocrine System

1. Describe the similarities and differences between the nervous and the endocrine systems
2. Describe the general characteristics of hormones and how they function
3. Discuss the three major ways that endocrine glands are stimulated to release hormones.
4. Explain how negative feedback regulates hormonal secretion.
5. Identify, locate and name the major endocrine glands and tissues of the body and list the major hormones produced by each
6. List the hormones released by the major endocrine glands and describe their main actions on their target tissues.
7. Discuss the consequences of hyposecretion and hypersecretion of some of the hormones and identify some of the most common maladies resulting from such imbalances.
8. Discuss the endocrine function of the kidneys, the gastrointestinal tract, the heart, and the placenta and other body organs and tissues.
9. Define or describe relevant terms from your text including:

adrenal cortex	target organ	releasing hormone	diabetes mellitis
tropic hormones	negative feedback	prostaglandins	androgens
islets of Langerhans	gigantism	goiter	

### Blood

1. Describe the physical and chemical characteristics of whole blood.
2. List the major chemical components of blood plasma.
3. Compare and contrast the structure, function, life span, numbers and production of each of the formed elements in blood.
4. Describe some of the common disorders of blood
5. Explain the role of stem cells in blood cell formation.
6. Briefly summarize the processes involved in the formation of blood clots and why clotting is important.
7. Describe the typing of blood into ABO and Rh blood groups and explain the basis of transfusion reactions.
8. Define or describe the relevant terms from your text including:

agglutination	leucocytes	basophils	hematocrit	fibrin
hematopoiesis	hemoglobin	thrombus	embolism	hemostasis
antibodies	neutrophil			

### The Circulatory System

1. Describe the location and structure of the heart and its surrounding membranes.
2. Trace the circulation of blood through the various chambers and valves and attached vessels of the heart.
3. Describe the cardiac circulation.
4. Explain why the heart is called a 'double pump'.
5. Describe the conducting system of the heart and how it generates the heartbeat
6. Describe and list the major vessels of the systemic and pulmonary circuits of blood flow.
7. Explain the operation of the atrioventricular and semilunar valves and how their function relates to the