

- Describe the roles of ADH and mineralocorticoids in the regulation of salt and water balance by the kidney.
- Describe the structure and the function of the ureters, bladder, and urethra.
- Describe the structural differences between the male and female urinary system and its clinical significance
- Explain how urine analysis can be used in diagnosis, give some specific examples
- Define or describe the relevant terms from your text including:

renal pyramids	buffer	calyx	intracellular fluid	ADH
electrolyte balance	nephron	secretion	peritubular capillaries	

The Reproductive System

- Describe the location and functions of the major organs of the male reproductive system.
- Describe the gross and histological structure of the testes.
- Discuss the composition of semen and name the structures that produce each of its components
- Describe the location and functions of the major organs of the female reproductive system.
- Describe the structure and function of the ovaries.
- List the layers of the uterus.
- Describe how meiosis differs from mitosis.
- Contrast oogenesis in females with spermatogenesis in males.
- Describe the role of hormones in reproductive function of both males and females
- Describe the monthly cycling of FSH, LH, estrogen and progesterone and their effects on the female reproductive system
- Describe the structure and function of the mammary glands.
- Define or describe the relevant terms from your text including:

gamete	epididymus	vasectomy	oogenesis	bulbourethral gland
corpus spongiosum	semen	corpus luteum	follicle cells	secondary sex char.
fallopian tubes	seminal vesicles	polar body	endometrium	

Human Development

- Trace the path of an ovum following ovulation and identify the site of fertilization and implantation.
- Describe the events of the preembryonic stage of development
- Distinguish between an embryo and a fetus.
- Describe the major embryonic stages of human development.
- Name the three embryonic tissue layers and the major organs or systems derived from each.
- Name and describe the principal events associated with fetal development.
- Describe the differences between adult and fetal blood circulation patterns
- Define or describe the relevant terms from your text including:

blastocyst	ectoderm	implantation	extraembryonic membranes
inner cell mass	neurula	tailbud	cleavage divisions
metamorphosis	ectoderm	primitive streak	fertilization membrane

Lecture Study Objectives: Exam V

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 Respiratory System

1. List the major functions of the respiratory system.
2. Identify the major organs of the respiratory system and the functions of each.
3. Describe the structure of the lungs and their role in gas exchange.
4. Describe the muscles involved in pulmonary ventilation and how they function.
5. Define tidal volume, and vital capacity, and residual volume.
6. Summarize how oxygen and carbon dioxide are **exchanged** between alveoli and blood and between the blood and tissue cells.
7. Describe how oxygen and carbon dioxide are each **transported** in the blood.
8. Define or describe the relevant terms from your text including:

soft palate	laryngopharynx	epiglottis	tidal volume	phrenic nerve
mediastinum	alveoli	respiratory membrane	respiratory tree	cellular respiration
ventilation	external respiration	expiration		

The Digestive System and Body Metabolism

1. List and describe the major functions of the digestive system
2. Describe the four histological layers of the alimentary canal and the regional modifications of each layer.
3. List the major organs and structures of the digestive system and describe the major functions of each
4. List the accessory digestive organs and describe their general functions
5. Define physical and chemical digestion and describe the processes involved in each.
6. List the major layers of a tooth, and the different kinds of teeth
7. Diagram a villus and describe its functional significance.
8. Name the end products of carbohydrate, lipid, and protein digestion.
9. Summarize the role of bile in lipid digestion.
10. Discuss the differences in the way water soluble and fat soluble nutrients are absorbed into the body
11. Define nutrient, essential nutrient, and calorie.
12. Discuss the dietary source, uses, and dietary requirements for water, carbohydrates, lipids, proteins, vitamins, and minerals in the diet.
13. List and describe the major functions of the liver, and the significance of a liver lobule
14. Define or describe the relevant terms from your text including:

rugae	jejunum	ileocecal valve	colon	pyloric sphincter	cystic duct
gingiva	absorption	basal metabolic rate	dentin	duodenum	physical digestion

The Urinary System

1. List the major functions of the urinary system.
2. Describe the location of the kidneys in the body with respect to serous membranes.
3. Identify and describe the following internal structures of a kidney in coronal section: hilus, cortex, medulla, pyramids, calyces, pelvis, and renal columns.
4. Describe the structure of a nephron and its associated blood supply.
5. Describe the mechanisms of urine formation (filtration, reabsorption, and secretion) and the areas of the nephron involved in each.