

Course Syllabus

VNSG 1420 (4:4:0)

ANATOMY & PHYSIOLOGY

Vocational Nursing Program – Levelland

Health Occupations Division

Technical Education Division

ONLINE CLASS

SOUTH PLAINS COLLEGE

SUMMER - 2021

5 Weeks

**SOUTH PLAINS COLLEGE -Levelland
Summer 2021
COURSE SYLLABUS**

COURSE TITLE: VNSG 1420 (4:4:0)
Anatomy & Physiology for Allied Health

INSTRUCTOR: Kim Schober RN MSN CRRN

OFFICE LOCATION Online
PHONE : 806-777-7254 cell/text (Prior to 9 PM Please)
KSchober@southplainscollege.edu

OFFICE HOURS: Please text or Email to set appointment

SOUTH PLAINS COLLEGE IMPROVES EACH STUDENT'S LIFE

COURSE DESCRIPTION:

This course is an introduction to the normal structure and function of the body, including an understanding of the relationship of body systems in maintaining homeostasis.

LEARNING OUTCOMES:

The student will identify the structure of each of the major body systems; describe the functions of each of the major body systems; and discuss the interrelationship of systems in maintaining homeostasis.

COURSE COMPETENCIES:

Student must complete this course with a grade of 75% or above based on the following objectives:

1. Describe the normal structure and function of the human body systems.
2. Develop an understanding of the holistic nature of the human species; how one system depends upon another to maintain homeostasis of the body.
3. Utilize a vocabulary consistent with terminology pertaining to the anatomical structure and functioning of the body.

ACADEMIC INTEGRITY: Refer to (Plainview) Student Handbook (page 24) and the SPC College Catalog (page 24).

SCANS & FOUNDATION SKILLS:

C – 5, 6, 7, 8, 15

F – 1, 2, 5, 6, 7, 10, 11, 12

VERIFICATION OF WORKPLACE COMPETENCIES:

NCLEX-PN Licensure Exam eligibility following successful completion of the one-year vocational nursing program.

TEXT: Memmler, Cohen, & Wood. (2015). The Human Body in Health & Disease, 14th Edition, J. B. Lippincott Co., Philadelphia.

Recommended: Workbook - Same Title & Author, Study Guide – 14th Edition.

ATTENDANCE POLICY: Refer to College Catalog (page 21) and Student Handbook
This course is a 64 contact hour course – 8 hours of allowable absence (Student Handbook).

CLASS REQUIREMENTS:

1. You will need computer access with video and sound recording capabilities and WIFI access. If you do not have a computer with these capabilities, please contact the nursing instructor. **There are some Chromebooks available for check out from the SPC Library or arrangements can be made for you to have computer access on campus.**
2. Read textbook material prior to class and be prepared for class discussion. Although you may not understand all of the text as you read, advance reading will help you to be familiar with the information to be presented in class.
3. The workbook that accompanies your text can be a valuable study guide for you. This is designed to assist you in the integration of the science of body systems into your knowledge base. Many test questions include content and context similar to the questions in your workbook.

Power points/Lectures will be posted to Blackboard each week. You will need to watch all the videos posted.

All tests will be posted to Blackboard on the FIRST test day listed at midnight and must be completed and submitted by the LAST test date listed at Midnight.

Please plan to attend each Group meeting so you know of any changes in assignments and tests. This is only a preliminary schedule and will be subject to change.

Please pay attention to the announcement section on Blackboard and check your SPC mail regularly for updates and announcements!!

GRADING:

Average of all 5 tests
A 100-90
B 89-80
C 79-75
Below 75 -Failure

CLASS SCHEDULE - ASSIGNMENTS:

June 1

Unit 2: Disease and the First Line of Defense

Chapter 5 – Disease and Disease-Producing Organisms

Chapter 6 – The Integumentary System

Unit 3: Movement and Support

Chapter 7 – The Skeleton: Bones and Joints

Chapter 8 – The Muscular System

June 5-7 Unit 2 & 3 exam

June 6

Unit 4: Coordination and Control

Chapter 9 – The Nervous System: The Spinal Cord and Spinal Nerves

Chapter 10 – The Nervous System: The Brain and Cranial Nerves

Chapter 12 – The Endocrine System: Glands and Hormones

June 12-14 Unit 4 exam

June 13

Unit 5: Circulation and Body Defense

Chapter 13 – The Blood/The Heart and Heart Disease

Chapter 14 The Heart and Heart Disease

Chapter 15 Blood Vessels and Blood Circulation

Chapter 17 Immunity

June 19-21 Unit 5 exam

June 20

Unit 6 Energy: Supply and use

Chapter 18 The Respiratory System

Chapter 19 The Digestive System;

Chapter 20- Metabolism, Nutrition, and Body Temperature/ Body Fluids

Chapter 22 – The Urinary System

June 26-28 Unit 6 exam

June 27

Unit 7: Population and Life

Chapter 23 – The Male and Female Reproductive Systems

Chapter 24 – Development and Birth;

Chapter 25 – Heredity and Hereditary Diseases

JULY 1- ONE DAY ONLY Unit 7 Exam

COURSE OUTLINE / UNIT OBJECTIVES:

UNIT 2

IV. INTEGUMENTARY SYSTEM / THE SKIN

Objectives:

1. Define disease and predisposing causes of disease
2. List four types of organisms studied in microbiology and characteristics of each
3. Identify some diseases caused by each type of organism
4. Describe the three types of bacteria according to shape
5. Identify several disease that may be caused by worms
6. Identify the skin layers and appendages
7. Identify the secretions of the skin and their function
8. Discuss the clinical significance of the skin
9. List the main functions of the skin
10. Identify some common skin disorders

Outline:

- I. Categories of disease
- II. Predisposing causes
- III. Terminology
- IV. Microorganisms
- V. Structure of the skin
- VI. Appendages
- VII. Functions
- VIII. Observation

UNIT 3

VII. SKELETAL SYSTEM / BONES & JOINTS

Objectives:

1. Describe the composition of bone tissue
2. Differentiate between compact bone and spongy
3. Explain how bones grow and harden
4. Differentiate between red and yellow bone marrow - location of each
5. Identify types of bones in the body and examples of each
6. List designated bones in the axial and appendicular skeletons, and location of each
7. Identify abnormal curves of the axial skeleton
8. Identify six types of joints based on movement, and give examples of each
9. Describe a synovial joint and give an example
10. Describe six types of fractures
11. Define six types of movement that occur at synovial joints

Outline:

- I. Bone structure
- II. Bone growth and repair
- III. Functions
- IV. Divisions of skeleton
- V. Bone landmarks
- VI. Bone disorders
- VII. Joints

VIII. MUSCULAR SYSTEM

Objectives:

1. Identify the characteristics of skeletal muscle
2. Describe muscle contraction and movement
3. List substances needed in muscle contraction
4. Describe how energy is produced in muscle contraction

5. Differentiate between isotonic and isometric contractions; define principles of body mechanics
6. Describe how muscles work in pairs to produce movement
7. Name and locate common major muscles in each muscle group; describe function of each
8. Discuss how muscles change with age

Outline:

- I. Characteristics
- II. Attachments
- III. Muscle movements
- IV. Muscle groups

UNIT 4

IX. NERVOUS SYSTEM / SPINAL CORD & SPINAL NERVES

Objectives:

1. Describe the organization of the nervous system according to structure and function
2. Explain the transmission of a nerve impulse
3. Identify functions of sensory, motor, and connective neurons
4. Define synapse and describe the role of neurotransmitters at the synapse
5. Name three types of nerves and explain how they differ from each other
6. Describe the spinal cord; identify its functions
7. Identify the spinal nerves and three main plexuses
8. Describe the reflex arc
9. Describe the two parts of the autonomic nervous system; compare the systemic effects

Outline:

- I. Nervous system
- II. Nerve cell
- III. Spinal cord
 - A. Location
 - B. Structure
 - C. Functions
 - D. Reflex arc
 - E. Spinal nerves
- IV. Autonomic nervous system
 - A. Sympathetic - adrenergic
 - B. Parasympathetic - cholinergic

X. THE NERVOUS SYSTEM - THE BRAIN & CRANIAL NERVES

Objectives:

1. Identify the location and functions of the four major divisions of the brain
2. Name the three meninges and their functions
3. Describe the function of cerebrospinal fluid; where and how it is formed
4. Identify the names and functions of the twelve cranial nerves
5. Describe the functions of each lobe of the cerebral cortex

Outline:

- I. Brain structure
- II. Divisions of the brain
 - A. Cerebrum / cerebral cortex
 - B. Diencephalon
 - C. Brain stem
 - D. Cerebellum
- III. Cranial nerves

XII. THE ENDOCRINE SYSTEM - GLANDS & HORMONES

Objectives:

1. Compare the effects of nervous system and endocrine system in controlling the body
2. Describe three methods by which hormones are released and regulated by the body
3. List the hormones produced by each endocrine gland and describe their functions
4. Explain why the anterior pituitary is referred to as the master gland
5. Explain the endocrine response to stress
6. Explain how the endocrine system contributes to homeostasis
7. Describe how the hypothalamus controls the anterior and posterior pituitary

Outline:

- I. Functions of hormones
- II. Endocrine glands
 - A. Pituitary
 - B. Thyroid / Parathyroid
 - C. Adrenal gland
 - D. Pancreas
 - E. Gonads
 - F. Thymus
 - G. Pineal body
 - H. Kidney
 - I. Atrial natriuretic peptides
 - J. Prostaglandins
- III. Hormones and stress

UNIT 5

XIII. THE BLOOD

Objectives:

1. List the functions of the blood
2. Identify the components of blood plasma
3. Name the three formed elements in the blood
4. Describe five types of leukocytes
5. Describe the process of blood clotting
6. Define blood type; identify the different blood types and their relationship to blood transfusions
7. Identify the antigens found in the red blood cell
8. Identify tests used to study blood

Outline:

- I. Description of blood
- II. Functions
 - A. Transportation
 - B. Regulation
 - C. Protection
- III. Constituents
 - A. Plasma
 - B. Formed elements
 1. Erythrocytes
 2. Leukocytes
 3. Platelets - thrombocytes
 4. Origin
 5. Homeostasis
- IV. Blood typing
 - A. Four blood types
 - B. Donars / recipients
 - C. Transfusion

V. Blood studies

XIV. THE HEART

Objectives:

1. Describe the three layers of the heart
2. Name the four chambers of the heart
3. Identify the four valves of the heart; describe the functional adaptation to the flow of blood through the heart
4. Trace the circulation of blood through the heart
5. Name the components of the conduction system; trace an impulse from the SA node through the conduction network
6. Briefly describe the cardiac cycle; discuss its relationship to blood pressure and pulse
7. Describe the action which produces the two main heart sounds
8. Identify components of a normal conduction cycle / EKG

Outline:

- I. Structure
 - A. Layers
 - B. Partition
 - C. Chambers
 - D. Valves
 - E. Blood supply to myocardium
- II. Physiology
- III. Conduction system
- IV. Instruments used to monitor
 - A. Stethoscope
 - B. Sphygmomanometer
 - C. EKG
 - D. Echocardiogram
 - E. Doppler
 - F. Cardiac catheterization

XIV. BLOOD VESSELS - BLOOD CIRCULATION

Objectives:

1. Differentiate between the three main types of vessels in the body with regard to structure and function
2. Name four sections of the aorta; name main branches
3. Name vessels of venous circulation and arterial circulation; identify location on diagram
4. Describe effects of vasodilation and vasoconstriction on blood distribution
5. Describe the structure and function of the hepatic portal system
6. Explain transport of substances across the capillary wall
7. Describe the relationship of blood circulation to the heart rate; identify body locations where pulse can be palpated
8. Describe factors that regulate blood flow
9. List several factors that affect blood pressure

Outline:

- I. Functional classification
 - A. Arteries
 - B. Veins
 - C. Capillaries
- II. Structure
- III. Arterial / venous vessels
 - A. Aorta > arteries
 - B. Systemic veins
 - C. Hepatic portal system
- IV. Physiology of circulation

- V. Pulse and blood pressure
 - A. Pulse
 - B. Blood pressure

XVII. & IMMUNE SYSTEM

Objectives:

5. Differentiate between nonspecific and specific body defenses; discuss components of body immune system and functions
6. Define antigen / antibody; what is relationship to immunity
7. Differentiate between types of immunity - inferred, natural, active acquired, passive acquired
8. Compare T cells and B cells with respect to development and type of activity

Outline:

- III. Immune system
 - A. Nonspecific
 - B. Immunity

UNIT 6

XVIII. RESPIRATORY SYSTEM

Objectives:

1. Define respiration and describe the three phases of respiration
2. Differentiate between external and internal respiration
3. Name and locate all structures of respiratory system
4. Identify the ways in which oxygen and carbon dioxide are transported in the blood stream
5. State the functions of respiratory and circulatory systems as it applies to the physiology of respiration
6. Explain the mechanism for pulmonary ventilation
7. Explain how carbon dioxide serves to regulate the pH of the blood
8. Identify protective mechanisms located within the nasal structure, pharynx, and larynx
9. Describe ways in which respiration is regulated

Outline:

- I. Respiration
 - A. Pulmonary ventilation
 - B. Cellular respiration
- II. Structure
 - A. Nasal cavities
 - B. Pharynx
 - C. Larynx
 - D. Trachea
 - E. Bronchi
 - F. Lungs
 - G. Diaphragm
- III. Physiology of respiration

XIX. DIGESTION

Objectives:

1. Name two main functions of the digestive system
2. Trace the digestive pathway, describing each organ and accessory organ according to structure, location and digestive function
3. Explain the role of enzymes in digestion; identify enzyme activity in each phase of the

- digestive process
4. Name the digestion products of fats, proteins, and carbohydrates
 5. Define absorption
 6. Describe how villi function in absorption
 7. Describe how bile functions in digestion
 8. Discuss the main functions of the liver
 9. Define metabolism and describe factors which affect the metabolic rate
 10. Explain the production of heat and role of digestion in this process

Outline:

- I. Digestive tract
 - A. Structure
- II. Accessory structures
- III. Process of digestion
- IV. Metabolism - Chapter 20

XXII. THE URINARY SYSTEM

Objectives:

6. Identify the systems that eliminate waste products from the body and the substances eliminated by each
7. Describe the parts of the urinary system and functions of each
8. Identify the parts of a nephron; describe the processes involved in urine formation
9. Identify the role of ADH in urine formation
10. Name two hormones produced by the kidneys and describe the function of each
11. Name three normal and six abnormal constituents of urine

Outline:

- II. Body intake and output of water
- III. Urinary system
 - A. Kidneys
 1. Structure
 2. Nephron
 3. Functions
 4. Renal physiology
 - a. glomerular filtration
 - b. tubular reabsorption / secretion
 - c. concentration of urine
 - B. Ureters
 - C. Urinary bladder
 - D. Urethra
- IV. Urine
 - A. Normal constituents
 - B. Abnormal constituents

UNIT 7

XXIII. REPRODUCTIVE SYSTEM

Objectives:

1. Identify and locate internal / external sex organs; describe function of each
2. List accessory organs and functions of each
3. Describe the composition and function of semen
4. Discuss phases and hormonal changes which occur during the female menstrual cycle
5. Explain the physiology of conception
6. Identify secondary sex characteristics for each gender

Outline:

- I. Male
 - A. Testes - scrotum
 - 1. Epididymus
 - 2. Vas deferens
 - 3. Seminal vesicle
 - 4. Spermatic cord
 - 5. Ejaculatory duct
 - 6. Prostate gland
 - 7. Urethra
 - 8. Penis
 - B. Physiology
- II. Female
 - A. Ovaries
 - 1. Graffian follicle - ovum
 - 2. Corpus luteum
 - 3. Menstrual cycle
 - B. Uterus / fallopian tubes
 - C. External genitalia / Vagina
 - D. Mammary glands

4.1.1 Syllabus Statements:

Each syllabus should include the following Diversity Statement and the Disabilities Statement appropriate to the location of the course.

4.1.1.1 Diversity Statement:

In this class, the teacher will establish and support an environment that values and nurtures individual and group differences and encourages engagement and interaction. Understanding and respecting multiple experiences and perspectives will serve to challenge and stimulate all of us to learn about others, about the large world and about ourselves. By promoting diversity and intellectual exchange, we will not only mirror society as it is, but also model society as it can be.

4.1.1.2. Disabilities Statement:

Levelland Campus

Students with disabilities, including physical, psychiatric, or learning disabilities, who wish to request accommodations in this class should notify the Special Services Office early in the semester so that the appropriate arrangements may be made.

In accordance with federal law, a student requesting accommodations must provide acceptable documentation of his/her disability to the Special Services Coordinator. For more information, call or visit the Special Services Office in the Student Services building. 894-9611 ext 2529.

Reese Center and Byron Martin Advanced Technology Center

(ATC)

Students with disabilities, including physical, psychiatric, or learning disabilities, who wish to request accommodations in this class should notify the Special Services Office early in the semester so that the appropriate arrangements may be made.

In accordance with federal law, a student requesting accommodations must provide acceptable documentation of his/her disability to the Special Services Coordinator. For more information, call or visit the Special Services Office in room 809 and 811, Reese Center, Building 8, 885-3048 ext 4654