

Course Syllabus

NOTE: This syllabus is subject to change during the semester. Please check this syllabus on a regular basis for any updates.

Department : Nursing- Vocational
Course Title : Health Science VNSG 1500
Section Name : L9
Start Date : 08/22/2011
End Date : 12/09/2011
Modality : WEB-ENHANCED
Credits : 5

Instructor Information

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Course Description

An introduction to the general principles of anatomy and physiology, nutrition, and microbiology that is necessary for understanding body processes and basic principles underlying health promotion and therapeutic interventions.

Prerequisites/Corequisites

Prerequisites: Program Admission
Co requisits: VNSG 1327; VNSG 1260; VNSG1505, VNSG 1502

Scans

1, 2, 3, 5, 6, 7, 9

Course Objectives

The student will identify and describe major body structures and functions which comprise the major body systems; recognize and describe the relationship of nutrition to health and illness across the life span; identify microorganisms as causative agents in disease; and identify common causes for disease, modes of transmission, and methods of prevention and control.

ESSENTIAL COMPETENCIES OF GRADUATES OF TEXAS VOCATIONAL NURSING EDUCATIONAL PROGRAMS

I. Member of the Profession:

- A. Function within the nurse's legal scope of practice and in accordance with the policies and procedures of the employing health care institution or practice setting.
- B. Assume responsibility and accountability for the quality of nursing care provided to patients and their families.
- C. Contribute to activities that promote the development and practice of vocational nursing.
- D. Demonstrate responsibility for continued competence in nursing practice, and develop insight through reflection, self-analysis, self-care, and lifelong learning.

II. Provider of Patient-Centered Care:

- A. Use clinical reasoning and established evidence-based policies as the basis for decision making in nursing practice.
- B. Assist in determining the physical and mental health status, needs, and preferences of culturally, ethnically, and socially diverse patients and their families based on interpretation of health-related data.
- C. Report data to assist in the identification of problems and formulation of goals/ outcomes and patient-centered plans of care in collaboration with patients, their families, and the interdisciplinary health care team.
- D. Provide safe, compassionate, basic nursing care to assigned patients with predictable health care needs through a supervised, directed scope of practice.
- E. Implement aspects of the plan of care within legal, ethical, and regulatory parameters and in consideration of patient factors.
- F. Identify and report alterations in patient responses to therapeutic interventions in comparison to expected outcomes.
- G. Implement teaching plans for patients and their families with common health problems and well-defined health learning needs.
- H. Assist in the coordination of human, information, and materiel resources in providing care for assigned patients and their families.

III. Patient Safety Advocate:

- A. Demonstrate knowledge of the Texas Nursing Practice Act and the Texas Board of Nursing Rules that emphasize safety, as well as all federal, state, and local government and accreditation organization safety requirements and standards.
- B. Implement measures to promote quality and a safe environment for patients, self, and others.
- C. Assist in the formulation of goals and outcomes to reduce patient risks.
- D. Obtain instruction, supervision, or training as needed when implementing nursing procedures or practices.
- E. Comply with mandatory reporting requirements of the Texas Nursing Practice Act.
- F. Accept and make assignments that take into consideration patient safety and organizational policy.

IV. Member of the Health Care Team:

- A. Communicate and collaborate with patients, their families, and the interdisciplinary health care team to assist in the planning, delivery, and coordination of patient-centered care to assigned patients.
- B. Participate as an advocate in activities that focus on improving the health care of patients and their families.
- C. Participate in the identification of patient needs for referral to resources that facilitate continuity of care, and ensure confidentiality.
- D. Communicate and collaborate in a timely manner with members of the interdisciplinary health care team to promote and maintain optimal health status of patients and their families.
- E. Communicate patient data using technology to support decision making to improve patient care.
- F. Assign nursing care to LVNs or unlicensed personnel based upon an analysis of patient or unit need.
- G. Supervise nursing care provided by others for whom the nurse is responsible.

The student must be prompt in reporting for class and for clinical rotations. Tardiness, which is defined as being late in excess of fifteen minutes, is not professional and is an unacceptable practice. Absences are discouraged. The door to the classroom will be closed when instruction begins and any student who is not present at that time will be required to wait in a common area outside the classroom until the next break occurs.

1. When a student is to be absent or late to class, she or he is to notify the instructor. If the Student is to be tardy or absent from a clinical rotation, the contact person designated by the instructor is to be notified as soon as possible before the absence or regular time to report on duty. Failure to do so will jeopardize the student's standing and may be considered voluntary termination by the student from the program. Failure to notify of tardiness or absence from class may result in written counselling. Two occurrences of tardiness will be counted as one absence from clinicals.
2. If it is medically necessary to miss a clinical experience, a physician's written excuse will be required.
3. The student is strongly encouraged to attend all classroom sessions. Please refer to the Absence and Tardiness policy. Absences in excess of this policy may result in the dismissal of the student from the program.

PLEASE PUT YOUR DEPARTMENT SPECIFIC INFORMATION IN THIS AREA

Required Readings/Materials

- a) You must purchase the following **required** readings/materials: See 2011-2012 Textbook List

Course Requirements (Lectures, Assignments and Assessments)

After studying Organization of the Human Body, Chemistry, Matter, and Life, Cells and Their Functions, and Tissues, Glands, and Membranes, the student vocational nurse will:

- Define the terms *anatomy*, *physiology*, and *pathology*.
- Describe the organization of the body from chemicals to the whole organism.
- List 11 body systems and give the general function of each.
- Define *metabolism* and name the two phases of metabolism
- Briefly explain the role of ATP in the body
- Differentiate between extracellular and intracellular fluids.
- Define and give examples of homeostasis
- Compare negative feedback and positive feedback
- List and define the main directional terms for the body.
- List and define the three planes of division of the body
- Name the subdivisions of the dorsal and ventral cavities
- Name and locate the subdivisions of the abdomen
- Name the basic units of length, weight, and volume in the metric system
- Define the metric prefixes *kilo-*, *centi-*, *milli-*, and *micro-*.
- Show how word parts are used to build words related to the body's organization.
- Define an element.
- Describe the structure of an atom
- Differentiate between molecules and compounds.
- Explain why water is so important to the body
- Define *mixture*; list the three types of mixtures, and give two examples of each.
- Differentiate between ionic and covalent bonds.
- Define an electrolyte.
- Define the terms *acid*, *base*, and *salt*.
- Explain how the numbers on the pH scale relate to acidity and basicity (alkalinity).
- Define *buffer* and explain why buffers are important in the body
- Define *radioactivity* and cite several examples of how radioactive substances are used in medicine
- List three characteristics of organic compounds.
- Name the three main types of organic compounds and the building blocks of each.
- Define *enzyme*; describe how enzymes work.
- Show how word parts are used to build words r List three types of microscopes used to study cells
- Describe the function and composition of the plasma membrane.
- Describe the cytoplasm of the cell, including the name and function of the main organelles.
- Describe the composition, location, and function of the DNA in the cell.
- Compare the function of three types of RNA in the cells.
- Explain briefly how cells make proteins.
- Name and briefly describe the stages in mitosis.

- Define eight methods by which substances enter and leave cells.
- Explain what will happen if cells are placed in solutions with concentrations the same as or
- Define *cancer*
- List several risk factors for cancer
- Show how word parts are used to build words related to cells and their functions.
- Name the four main groups of tissues and give the location and general characteristics of each
- Describe the difference between exocrine and endocrine glands and give examples of each.
- Give examples of circulating, generalized, and structural connective tissues.
- Describe three types of epithelial membranes.
- List several types of connective tissue membranes
- Explain the difference between benign and malignant tumors and give several examples of each.
- List some signs of cancer.
- List six methods of diagnosing cancer.
- Describe three traditional methods of treating cancer.
- Show how word parts are used to build words related to tissues, glands, and membranes

After studying Organization of the Human Body, Chemistry, Matter, and Life, Cells and Their Functions, and Tissues, Glands, and Membranes, the student vocational nurse will:

- Define disease and list seven categories of disease
- List seven predisposing causes of disease
- Define terminology used in describing and treating disease.
- Define *complementary and alternative medicine*; cite several alternative or complementary fields of practice.
- Explain methods by which microorganisms can be transmitted from one host to another.
- List four types of organisms studied in microbiology and give the characteristics of each.
- List some diseases caused by each type of microorganism.
- Define *normal flora* and explain the value of the normal flora.
- Describe the three types of bacteria according to shape.
- List several diseases in humans caused by worms
- Give some reasons for the emergence and spread of microorganisms today.
- Name and describe the layers of the skin.
- Describe the subcutaneous tissue.
- Give the location and function of the accessory structures of the skin.
- List the main functions of the skin.
- Summarize the information to be gained by observation of the skin.
- List the main disorders of the skin.
- Show how word parts are used to build words related to the skin.

After studying The Skeleton: Bones & Joints and The Muscular System, the vocational nursing student will:

- List the functions of bones.
- Describe the structure of a long bone
- Differentiate between compact bone and spongy bone with respect to structure and location
- Differentiate between red and yellow marrow with respect to function and location.

- Name the three different types of cells in bone and describe the functions of each.
- Explain how a long bone grows
- Name and describe various markings found on bones
- List the bones in the axial skeleton
- Explain the purpose of the infant fontanelles
- Describe the normal curves of the spine and explain their purpose
- List the bones in the appendicular skeleton.
- Compare the structure of the female pelvis and the male pelvis.
- Describe five types of bone disorders.
- Name and describe eight types of fractures
- Describe how the skeleton changes with age
- Describe the three types of joints. Explain and discuss various terms related to culture.
- List the five population groups delineated in the United States.
- List the five population groups delineated in the United States.
- Differentiate race from ethnicity and culture.
- Compare ethnicity and culture.
- Contrast stereotyping and generalization.
- Differentiate stereotyping and generalization.
- Describe how cultural background and practices influence actions and behaviors.
- Explain how cultural practices and background affect behavior. Name three views that societies use to explain illness or disease.
- List three views societies use to explain illness or disease. Discuss biocultural assessment.
- Explain the components of a biocultural assessment.
- Describe cultural assessment.
- Explain a cultural assessment and its uses
- Explain the meaning and characteristics of transcultural nursing.
- Define transcultural nursing.
- Describe the characteristics of transcultural nursing. List at least five ways to demonstrate culturally competent nursing care.
- Indicate at least five ways to display transcultural nursing competence

After studying The Nervous System, The Sensory System, and The Endocrine System, the vocational nursing student will:

- Describe the organization of the nervous system according to structure and function
- Describe the structure of a neuron.
- Describe how neuron fibers are built into a nerve
- Explain the purpose of neuroglia
- Diagram and describe the steps in an action potential
- Briefly describe the transmission of a nerve impulse.
- Explain the role of myelin in nerve conduction
- Briefly describe transmission at synapse.
- Define *neurotransmitter* and give several examples of neurotransmitters
- Describe the distribution of gray and white matter in the spinal cord.
- List the components of a reflex arc.

- Define a simple reflex and give several examples of reflexes.
- Describe and name the spinal nerves and three of their main plexuses
- Compare the location and functions of the sympathetic and parasympathetic nervous systems.
- Explain the role of cellular receptors in the action of neurotransmitters
- Describe several disorders of the spinal cord and of the spinal nerves.
- Show how word parts are used to build words related to the nervous system.
- Give the location and functions of the four main divisions of the brain.
- Name and describe the three meninges
- Cite the function of cerebrospinal fluid and describe where and how this fluid is formed.
- Name and locate the lobes of the cerebral hemispheres.
- Cite one function of the cerebral cortex in each lobe of the cerebrum.
- Name two divisions of the diencephalon and cite the functions of each
- Locate the three subdivisions of the brain stem and give the functions of each.
- Describe the cerebellum and cite its functions.
- Name some techniques used to study the brain
- Cite the names and functions of the 12 cranial nerves.
- List some disorders that involve the brain, its associated structures, or the cranial nerves.
- Show how word parts are used to build words related to the nervous system.
- Describe the function of the sensory system.
- Differentiate between the special and general senses and give examples of each.
- Describe the structure of the eye.
- List and describe the structures that protect the eye.
- Define *refraction* and list the refractive parts of the eye.
- Differentiate between the rods and the cones of the eye.
- Compare the functions of the extrinsic and intrinsic muscles of the eye.
- Describe the nerve supply to the eye.
- Describe the three divisions of the ear
- Describe the receptor for hearing and explain how it functions.
- Compare static and dynamic equilibrium and describe the location and function of these receptors.
- Explain the function of proprioceptors
- Compare the effects of the nervous system and the endocrine system in controlling the body.
- Describe the functions of hormones.
- Discuss the chemical composition of hormones
- Explain how hormones are regulated.
- Identify the glands of the endocrine system on a diagram.
- List the hormones produced by each endocrine gland and describe the effects of each on the body.
- Describe how the hypothalamus controls the anterior and posterior pituitary
- Describe the effects of hyposecretion and hypersecretion of the various hormones.
- List tissues other than the endocrine glands that produce hormones.
- List some medical uses of hormones.
- Explain how the endocrine system responds to stress.
- Show how word parts are used to build words related to the endocrine system.

After studying The Blood, The Heart and Heart Disease, Blood Vessels and Blood Circulation, The Lymphatic System, and Body Defenses, Immunity, and Vaccines, the vocational nursing student will:

- List the functions of the blood
- List the main ingredients in plasma.
- Describe the formation of blood cells
- Name and describe the three types of formed elements in the blood and give the function of each
- Characterize the five types of leukocytes
- Define *hemostasis* and cite three steps in hemostasis
- Briefly describe the steps in blood clotting.
- Define *blood type* and explain the relation between blood type and transfusions.
- List the possible reasons for transfusions of whole blood and blood components
- Define *anemia* and list the causes of anemia
- Define *leukemia* and name the two types of leukemia.
- Describe several forms of clotting disorders
- Specify the tests used to study blood.
- Show how word parts are used to build words related to the blood.
- Describe the three layers of the heart wall.
- Describe the structure of the pericardium and cite its functions
- Compare the functions of the right and left sides of the heart
- Name the four chambers of the heart and compare their functions.
- Name the valves at the entrance and exit of each ventricle and cite the function of the valves
- Briefly describe blood circulation through the myocardium
- Briefly describe the cardiac cycle.
- Name and locate the components of the heart's conduction system
- Explain the effects of the autonomic nervous system on the heart rate
- List and define several terms that describe variations in heart rates
- Explain what produces the two main heart sounds
- Describe several common types of heart disease.
- List five actions that can be taken to minimize the risk of heart disease
- Briefly describe four methods for studying the heart.
- Describe several approaches to the treatment of heart disease
- Show how word parts are used to build words related to the heart
- Differentiate among the five types of blood vessels with regard to structure and function.
- Compare the pulmonary and systemic circuits relative to location and function.
- Name the four sections of the aorta and list the main branches of each section.
- Define *anastomosis*, cite its function, and give several examples.
- Compare superficial and deep veins and give examples of each type.
- Name the main vessels that drain into the superior and inferior venae cavae.
- Define *venous sinus* and give several examples of venous sinuses.

- Describe the structure and function of the hepatic portal system
- Explain the forces that affect exchange across the capillary wall
- Describe the factors that regulate blood flow
- Define *pulse* and list factors that affect pulse rate.
- List the factors that affect blood pressure.
- Explain how blood pressure is commonly measured.
- List reasons why hypertension should be controlled.
- List some disorders that involve the blood vessels.
- List steps in first aid for hemorrhage.
- List four types of shock.
- Show how word parts are used to build words related to the blood vessel and circulation.

After studying The Lymphatic System, and Body Defenses, Immunity, and Vaccines, the vocational nursing student will:

- List the functions of the lymphatic system..
- Explain how lymphatic capillaries differ from blood capillaries.
- Name the two main lymphatic ducts and describe the area drained by each.
- List the major structures of the lymphatic system and give the locations and functions of each.
- Describe the composition and function of the reticuloendothelial system.
- Describe the major lymphatic system disorders.
- Show how word parts are used to build words related to the lymphatic system.
- List the factors that determine the occurrence of infection
- Differentiate between nonspecific and specific body defenses and give examples of each.
- Briefly describe the inflammatory reaction.
- List several types of innate immunity.
- Define *antigen* and *antibody*.
- Compare T cells and B cells with respect to development and type of activity.
- Explain the role of macrophages in immunity. Describe some protective effects of an antigen-antibody reaction.
- Differentiate between natural and artificial adaptive immunity.
- Differentiate between active and passive immunity.
- Define the term *vaccine* and give several examples of vaccines.
- Define the term *immune serum* and give several examples of immune sera.
- List several disorders of the immune system. Explain the possible role of the immune system in preventing cancer.
- Explain the role of the immune system in tissue transplantation.
- Show how word parts are used to build words related to body defenses, immunity, and vaccines.

After studying The Respiratory System, and The Digestive System, the vocational nursing student will:

- Define *respiration* and describe the three phases of respiration
- Name and describe all the structures of the respiratory system.
- Explain the mechanism for pulmonary ventilation.
- List the ways in which oxygen and carbon dioxide are transported in the blood.
- Describe nervous and chemical controls of respiration.
- Give several examples of altered breathing patterns.
- List and define four conditions that result from inadequate breathing.
- Describe several types of respiratory infection.
- Describe some allergic responses that affect the respiratory system.
- Name the diseases involved in chronic obstructive pulmonary disease (COPD).
- Describe some disorders that involve the pleura.
- Describe equipment used to treat respiratory disorders.
- Show how word parts are used to build words related to respiration.
- Name the three main functions of the digestive system.
- Describe the four layers of the digestive tract wall.
- Differentiate between the two layers of the peritoneum.
- Name and locate the different types of teeth.
- Name and describe the functions of the organs of the digestive tract.
- Name and describe the functions of the accessory organs of digestion.
- Describe how bile functions in digestion.
- Name and locate the ducts that carry bile from the liver into the digestive tract.
- Explain the role of enzymes in digestion and give examples of enzymes.
- Name the digestion products of fats, proteins, and carbohydrates.
- Define *absorption*
- Define *villi* and state how villi function in absorption
- Explain the use of feedback in regulating digestion and give several examples.
- List several hormones involved in regulating digestion.
- Describe common disorders of the digestive tract and the accessory organs.
- Show how word parts are used to build words related to digestion.

After studying Metabolism, Nutrition, and Body Temperature, Body Fluids, and The Urinary System, the vocational nursing student will:

- Differentiate between catabolism and anabolism
- Differentiate between the anaerobic and aerobic phases of cellular respiration and give the end products and the relative amount of energy released by each
- Define *metabolic rate* and name several factors that affect the metabolic rate
- Explain the roles of glucose and glycogen in metabolism.
- Compare the energy contents of fats, proteins, and carbohydrates.
- Define *essential amino acids*.
- Explain the roles of minerals and vitamins in nutrition and give examples of each
- List the recommended percentages of carbohydrate, fat, and protein in the diet.

- Distinguish between simple and complex carbohydrates, giving examples of each
- Compare saturated and unsaturated fats.
- List some adverse effects of alcohol consumption
- Describe some nutritional disorders.
- Explain how heat is produced and lost in the body.
- Describe the role of the hypothalamus in regulating body temperature.
- Explain the role of fever in disease.
- Describe some adverse effects of excessive heat and cold temperature.
- Compare intracellular and extracellular fluids
- List four types of extracellular fluids.
- Name the systems that are involved in water balance.
- Explain how thirst is regulated.
- Define electrolytes and describe some of their functions.
- Describe the role of hormones in electrolyte balance
- Describe three methods for regulating the pH of body fluids.
- Compare acidosis and alkalosis, including possible causes.
- Describe three disorders involving body fluids.
- Specify some fluids used in therapy.
- Show how word parts are used to build words related to bodily fluids.
- List the systems that eliminate waste and name the substances eliminated by each
- Describe the parts of the urinary system and give the functions of each
- List the activities of the kidneys in maintaining homeostasis
- Trace the path of a drop of blood as it flows through the kidney.
- Describe a nephron
- Name the four processes involved in urine formation and describe the action of each.
- Identify the role of antidiuretic hormone (ADH) in urine formation.
- Describe the components and functions of the juxtaglomerular (JG) apparatus.
- Describe the process of micturition.
- Name three normal and six abnormal constituents of urine.
- List the common disorders of the urinary system.
- List six signs of chronic renal failure.
- Explain the principle and the purpose of kidney dialysis.
- Show how word parts are used to build words related to the urinary system.

After studying Heredity and Hereditary Diseases, the vocational nursing student will:

- Briefly describe the mechanism of gene function.
- Explain the difference between dominant and recessive genes.
- Compare *phenotype* and *genotype* and give examples of each.
- Describe what is meant by a *carrier* of a genetic trait.
- Define *meiosis* and explain its function in reproduction.
- Explain how sex is determined in humans.

- Describe what is meant by the term *sex-linked* and list several sex-linked traits.
- Define *mutation*.
- Differentiate among congenital, genetic, and hereditary disorders and give several examples of each.
- List several factors that may cause genetic disorders.
- Define *karyotype* and explain how karyotypes are used in genetic counseling.
- Briefly describe several methods used to treat genetic disorders.
- Show how word parts are used to build words related to heredity.

**Odessa College
School of Vocational Nursing
Monahans Extension**

**Nursing in Health and Illness I
Timeline 2011-2012**

August 22
Memmler Ch 1-4
Examination #1

August 29

August 29
Memmler Ch 5-6
Examination #2

September 9

September 9

Memmler Ch 7-8 Examination #3	September 12
September 12, 19 Memmler Ch 9-12 Examination #4	September 26
September 26 Memmler Ch 13-15 Examination #5	October 3
October 3 Memmler Ch 16-17 Examination #6	October 10
October 10 Memmler Ch 16-17 Examination #7	October 17
October 17 Memmler Ch 18-19 Examination #8	October 24
October 24, 31 Memmler Ch 20-22 Examination #9	November 7
November 14 Memmler Ch 25 Examination #10	November 21
Final Examination	December 7

Timelines are subject to change.

Grading Criteria

1. A minimum grade of C is required in all nursing and allied health courses. Each component within a course must be completed with a C or above or the student will receive a failing grade. A student who fails to attain 75% on a unit examination must provide documentation of remediation by an approved tutor or student mentor. Arrangements must be made in conjunction with an instructor in the program.
2. A minimum grade of C must be maintained in the clinical area. This grade will be derived from the averages on nursing care plans, case studies, and all other written clinical assignments. Written work will be factored into the clinical nursing grade which is either 'Pass' or 'Fail.'
3. Any grade below 75% will be considered failing.
4. A report of grades will be distributed to each student at the completion of each semester.

5. A minimum grade of 90% is required on the math competency examination which is administered each semester. The student will have 3 opportunities to pass this examination. A student who does not successfully pass the examination on the first and second attempts will be required to show evidence of remediation with either an instructor or a student who has attained 95% or above on the examination. A student who is unable to pass the competency examination on the third opportunity will be dismissed from the program.

A = 90 to 100 B = 80 to 89 C = 75 to 79 D= 60 to 74 F = Below 60

Grading criteria are consistent throughout the nursing program at the Monahans Center. The following method of evaluation will be used in assigning course grades:

Tests and Quizzes.....	70%
Daily Work/ ATI content exams.....	10%
Final Exam.....	20%

Special Needs

Odessa College complies with Section 504 of the Vocational Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. If you have any special needs or issues pertaining to your access to and participation in this or any other class at Odessa College, please feel free to contact me to discuss your concerns. You may also call the Office of Disability services at 432-335-6861 to request assistance and accommodations.

Learning Resource Center (Library)

The Library, known as the [Learning Resources Center](#), provides research assistance via the [LRC's catalog \(print books, videos, e-books\)](#) and [databases \(journal and magazine articles\)](#). [Research guides](#) covering specific subject areas, [tutorials](#), and the "Ask a Librarian" service provide additional help.

Student E-mail

Please access your [Odessa College Student E-mail](#), by following the link to either set up or update your account: <http://www.odessa.edu/gmail/>. **All assignments or correspondence will be submitted using your Odessa College email.**

Student Portal

Please access your [Odessa College Student E-mail](#), by following the link to either set up or update your account: <http://www.odessa.edu/gmail/>. **All assignments or correspondence will be submitted using your Odessa College email.**

Technical Support

For Blackboard username and password help and for help accessing your online course availability and student email account contact the Student Success Center at 432-335-6878 or online at https://www.odessa.edu/dept/ssc/helpdesk_form.htm.

Important School Policies

For information regarding student support services, academic dishonesty, disciplinary actions, special accommodations, or students' and instructors' right to academic freedom can be found in the [Odessa College Student Handbook](#).

