

EASTERN ARIZONA COLLEGE
Human Pathophysiology

Course Design
2019-2020

Course Information

Division Allied Health
Course Number HCE 240
Title Human Pathophysiology
Credits 4
Developed by Randy Morris
Lecture/Lab Ratio 4 Lecture/0 Lab

Transfer Status

| ASU | NAU | UA |
|---------|---------------------------|-----------------|
| HCR 240 | NUR Departmental Elective | Elective Credit |

Activity Course No
CIP Code 51.0800
Assessment Mode Final Exam (50 Questions/50 Points)
Semester Taught Fall and Spring
GE Category None
Separate Lab No
Awareness Course No
Intensive Writing Course No
Diversity and Inclusion Course No

Prerequisites

HCE 190 or BIO 160 or BIO 202 or concurrent enrollment in BIO 202 or instructor approval

Educational Value

This course is required for the AAS degree in Nursing and Paramedicine.

Description

Chemical, biologic, biochemical, and psychological processes as a foundation for the understanding of alterations in health. This course focuses on the etiology, symptomatology, evaluation, treatment, and prognosis of disease processes of the human body system. These may provide awareness of possible implications of certain aspects of diseases, current scientific advances, and selected therapeutics.

Supplies

None

Competencies and Performance Standards

1. Describe basic concepts of disease processes.

Learning objectives

What you will learn as you master the competency:

- a. List common terminology used in pathophysiology and the basic cell changes associated with disease processes.
- b. Identify factors affecting inflammation and healing, reduction of pain, and maintenance of function in the individual.
- c. Describe abnormal immune responses to include anaphylaxis, autoimmune disorders, transplants, immunodeficiency, and the links to cancer.
- d. Characterize bacterial and viral infections with other microbial classifications.
- e. Explain the differences between benign and malignant neoplasms, nomenclature, carcinogenesis, and the local and systemic effects of malignant neoplasms.
- f. Describe fluid and hemodynamic disorders.

Performance Standards

Competence will be demonstrated:

- o in completion of course assignments
- o in completion of the tests

Criteria - Performance will be satisfactory when:

- o learner participates in general class discussions and activities
- o learner recognizes signs and symptoms of pathophysiological changes

2. Discuss altered status in terms of genetic and developmental diseases.

Learning objectives

What you will learn as you master the competency:

- a. Differentiate between congenital and genetic disorders, and between recessive, dominant, and sex-linked disorders.
- b. Describe health problems associated with adolescence.
- c. Identify pathophysiologic effects of pregnancy.
- d. Describe aging process and chronic illness in the elderly.
- e. Explain the effects of immobility on body structures and functions.

Performance Standards

Competence will be demonstrated:

- o in completion of course assignments
- o in completion of the tests

Criteria - Performance will be satisfactory when:

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3. Analyze altered status in terms of stress, pain, substance abuse, and environmental hazards.

Learning objectives

What you will learn as you master the competency:

- a. Recognize stress as an important component of many disorders, as a predisposing or exacerbating factor as well as an outcome.
- b. Identify pain theory and various methods of pain control.
- c. Describe pain in relation to cancer, involving both acute and chronic pain.
- d. Recognize pathologic effects of substance abuse as a cause of a disorder, and by distorting or exacerbating clinical signs and interfering with treatment.
- e. Describe causative factors in the environment to include radiation, hypothermia, chemicals, and infections.

Performance Standards

Competence will be demonstrated:

- o in completion of course assignments
- o in completion of the tests

Criteria - Performance will be satisfactory when:

- o learner participates in general class discussions and activities
- o learner recognizes signs and symptoms of pathophysiological changes

4. Describe pathophysiology of cardiovascular system.

Learning objectives

What you will learn as you master the competency:

- a. Explain the effects of cardiovascular system disorders, such as blood dyscrasias and cardiac problems.
- b. Outline cardiac disorders such as myocardial infarction, congestive heart failure, valvular abnormalities, dysrhythmias, rheumatic heart disease, and congenital defects.
- c. Describe basic problem of atherosclerosis, circulatory shock, and cardiovascular emergencies.

Performance Standards

Competence will be demonstrated:

- o in completion of course assignments
- o in completion of the tests

Criteria - Performance will be satisfactory when:

- o learner participates in general class discussions and activities
- o learner recognizes signs and symptoms of pathophysiological changes

5. Describe pathophysiology of respiratory system.

Learning objectives

What you will learn as you master the competency:

- a. Describe respiratory disorders in relation to changes in the normal structures of the system, affecting ventilation or gas exchange.
- b. Express basic concepts of respiratory function, pathophysiologic changes, and the treatment of respiratory disorders.

- c. Describe major disorders such as COPD, tuberculosis, cystic fibrosis, infections of the upper tract and pneumonia, pulmonary emboli, respiratory distress syndrome and chest injury.
- d. Identify the impact of respiratory dysfunction in other systems such as skeletal, muscular, cardiovascular, and neurological.
- e. Recognize the importance of the respiratory system in acid-base balance as well as oxygen supply.
- f. Distinguish features for each respiratory problem including respiratory emergencies, linking shock and respiratory distress syndrome, or burns and associated respiratory problems.
- g. Compile risk factors for lung cancer for several individuals.

Performance Standards

Competence will be demonstrated:

- o in completion of course assignments
- o in completion of the tests

Criteria - Performance will be satisfactory when:

- o learner participates in general class discussions and activities
- o learner recognizes signs and symptoms of pathophysiological changes

6. Describe pathophysiology of digestive system disorders.

Learning objectives

What you will learn as you master the competency:

- a. Outline digestive system disorders such as peritonitis, obstructions, cirrhosis, and pancreatitis.
- b. Trace a meal down the tract, considering all phases of digestive process in sequence.
- c. Group digestive system disorders into those of the upper tract (oral cavity, esophagus and stomach), the lower tract (intestines) and the liver/pancreases.
- d. Classify digestive system disorders into structural abnormalities, infections, or inflammatory conditions.
- e. Compare types and locations of pain associated with gastrointestinal disorders.
- f. Compare drugs as well as imbalances associated with vomiting and diarrhea.

Performance Standards

Competence will be demonstrated:

- o in completion of course assignments
- o in completion of the tests

Criteria - Performance will be satisfactory when:

- o learner participates in general class discussions and activities
- o learner recognizes signs and symptoms of pathophysiological changes

7. Describe pathophysiology of urinary tract disorders.

Learning objectives

What you will learn as you master the competency:

- a. Explain the mechanisms of altered structure and function in the urinary systems, including blood pressure, acid-base balance and calcium metabolism in addition to the system's role in elimination.
- b. Compare the normal function of a nephron with the process of dialysis.
- c. Separate filtration, secretion, and reabsorption with a prediction of what can go wrong in each part of the urinary system.
- d. Outline urinary tract disorders such as cystitis, pyelonephritis, glomerulonephritis, and renal calculi.
- e. Discuss acute and chronic renal failure.
- f. Discuss the effects of chronic renal disease on a child's growth and development.

Performance Standards

Competence will be demonstrated:

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- o in completion of the tests

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- o learner recognizes signs and symptoms of pathophysiological changes

8. Define pathophysiology of neurologic system.

Learning objectives

What you will learn as you master the competency:

- a. Outline focal signs, based on the area of damage related to loss of normal function.
- b. Describe the effects of increased intracranial pressure.
- c. Describe neurotransmitters as causes of illness and their importance in the treatment of many disorders.
- d. Express consideration of the irreversible effects of damage in the nervous system, particularly in light of possible secondary damage with injuries or other acute problems.
- e. Recognize neurologic disorders such as acute brain disorders, chronic disease, spinal cord damage, mental disorders, and eye and ear disorders.
- f. Differentiate among the many chronic neurologic disorders, using flipcards with names, abbreviations, brief pathophysiology, and the presence of motor, sensory or mixed deficits.
- g. Describe types of aphasia, abnormal gaits and postures, spinal cord injuries during spinal shock and post-spinal shock, and chronic degenerative disorders.

Performance Standards

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9. Outline pathophysiology of the endocrine system.

Learning objectives

What you will learn as you master the competency:

- a. Explain the clinical effects of an excess or deficit of a hormone.
- b. Outline endocrine disorders in diabetes mellitus.
- c. Describe the variation in the feedback systems, resulting from different causative factors in certain endocrine disorders (e.g., calcium imbalance).
- d. Identify signs and symptoms of Cushing's syndrome and its relationship to treatment with cortisol and the potential complications for patient care.
- e. Describe pituitary tumors in terms of integration between the nervous and endocrine systems.

Performance Standards

Competence will be demonstrated:

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Criteria - Performance will be satisfactory when:

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10. Describe pathophysiology of musculoskeletal disorders.

Learning objectives

What you will learn as you master the competency:

- a. Explain the disorders of bone, muscle, and joints.
- b. Differentiate inflammatory joint disorders from the degenerative type.
- c. Describe basic concepts of restoring or maintaining function or mobility.

Performance Standards

Competence will be demonstrated:

- o in completion of course assignments
- o in completion of the tests

Criteria - Performance will be satisfactory when:

- o learner participates in general class discussions and activities
- o learner recognizes signs and symptoms of pathophysiological changes

11. Describe altered status of skin disorders.

Learning objectives

What you will learn as you master the competency:

- a. Identify different types of skin disorders.
- b. Recognize infectious lesions, allergic reactions, or excessive bleeding tendencies in patients.
- c. Compare skin rashes in terms of cause, appearance, sensation, and aggravating factors.
- d. Recognize and prevent possible infections or malignancies.

Performance Standards

Competence will be demonstrated:

- o in completion of course assignments
- o in completion of the tests

Criteria - Performance will be satisfactory when:

- o learner participates in class discussions and activities
- o learner recognizes signs and symptoms of pathophysiological changes

12. Identify altered status of reproductive disorders.

Learning objectives

What you will learn as you master the competency:

- a. Describe major reproductive disorders such as infections, including sexually transmitted diseases, and cancers commonly occurring in males and females.
- b. Compare a number of STDs or cancers, considering cause and early signs.
- c. Assess the risk factors for cancer in several individuals; for example, taking breast cancer and assigning numbers for genetic and hormonal factors.

Performance Standards

Competence will be demonstrated:

- o in completion of course assignments
- o in completion of the tests

Criteria - Performance will be satisfactory when:

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Types of Instruction

Classroom Presentation

Research Paper

Grading Information

Grading Rationale

Five written examinations will count as 60% of the final course grade. The final exam will count as 30% of the final course grade. The research paper counts as 10% of the final grade.

Grading Scale

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|---|---------|
| A | 90-100% |
| B | 80-89% |
| C | 70-79% |
| D | 60-69% |
| F | 0-59% |