

Course Description

HIM2433 | Pathophysiology and Pharmacology | 3 credits

This course provides an in-depth knowledge of disease, its etiology, medical complications, and pathophysiologic nature. Students will learn laboratory and other diagnostic tests used to confirm or rule out those diagnoses addressed. Current pharmacological treatments are explored with review and interpretation of health record data. (3 hr. lecture)

Course Competencies

Competency 1:

The student will demonstrate knowledge of diseases, predisposing factors, and environmental/chemical agents that affect the body; be proficient in basic pharmacology with a focus on properties of drugs, their sources, produce effects and drug nomenclature; and will demonstrate their understanding of pathophysiological process of infectious processes, neoplastic diseases, and disorders by:

- a. Defining pathophysiology/disease, and name some processes
- b. Describing how diseases are named and classified
- c. Verifying familiar with basic terminology of diagnosis and treatment
- d. Interpreting meanings of terms referring to various features of diseases
- e. Examining medical history and physical report
- f. Naming example of sources of drugs, pharmaceutical preparations, and administration
- g. Describing basic characteristics of bacteria, viruses, fungi, and parasites
- h. Listing common communicable diseases, sexually transmitted diseases and their processes
- i. Verifying signs/symptoms, stages, etiology, and treatment of severe acute respiratory syndrome (SARS), human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS), West Nile virus, Covid, sepsis, etc.
- j. Reporting physical and chemical agents that may cause disease
- k. Comparing disease process of benign and malignant tumors
- l. Interpreting the grading and staging systems of malignant tumors described by physician/pathologist
- m. Differentiating lab/radiology tests used to detect conditions/diseases of infectious and neoplasms
- n. Explaining common surgical procedures performed to correct diseases/disorders of infectious and neoplasms
- o. Identifying current drug actions, adverse reactions, contraindications, precautions

Learning Outcomes

1. Learning outcome 4, Formulate strategies to locate, evaluate, and apply information.
2. Describe how natural systems function and recognize the impact of humans on the environment

Competency 2:

The student will demonstrate current knowledge of common conditions/diseases, treatment modalities, and outcomes of individuals with disease/disorders of endocrine, digestive, nervous, sensory systems, and mental health by:

- a. Explaining Meniere's syndrome/otosclerosis
- b. Listing types of cataracts/eye degeneration diseases
- c. Explaining how cerebral aneurysms develop, their effects, possible complications, and common surgical procedures
- d. Describing causes, pathophysiology, and manifestation of bacterial meningitis/abscess
- e. Naming causes and primary treatments/medications commonly used for Crohn's disease/cholecystitis/gastritis/pancreatitis/peptic ulcers
- f. Listing various types of hernias
- g. Discussing complications of diabetes mellitus
- h. Stating causes of most common endocrine disorders
- i. Recognizing the basic structure and functions of the endocrine, digestive, and nervous (including eye and ear)
- j. Describing otitis media and its cause, pathophysiology, and signs
- k. Identifying contributing factors to mental disorders
- l. Discussing the use of Diagnostic and Statistical Manual of Mental Disorders (DSM-V) and the use of mental health assessment tool
- m. Designing a mental health fact sheet
- n. Differentiating lab/radiology tests used to detect conditions/diseases of endocrine, digestive, nervous, sensory systems, and mental health
- o. Identifying current drug actions, adverse reactions, contraindications, and precautions
- p. Recommending common lab/radiology tests, medications, and surgical procedures for diseases/disorders of the endocrine, digestive, nervous (including eye and ear)
- q. Discovering various methods of treatment for mental disorders

Learning Outcomes

1. Formulate strategies to locate, evaluate, and apply information.
2. Describe how natural systems function and recognize the impact of humans on the environment.

Competency 3: The student will discuss the pathophysiological process and outcomes of circulatory, respiratory, skin, musculoskeletal systems by:

- a. Recognizing the basic structure and functions of the circulatory, respiratory, skin, musculoskeletal systems
- b. Explaining myocardial infarction causes and current treatment/procedural modalities
- c. Differentiating thrombophlebitis and varicose veins
- d. Contrasting the various types of anemia/leukemia/heart failures
- e. Describing most common cardiac disorders among United States population
- f. Comparing types and causes of pneumonia
- g. Discussing the causes and prognosis of asthma
- h. Stating common acute and chronic lung diseases and prognosis
- i. Explaining the disease long-term effects of inhalation of dust particles
- j. Listing four common symptoms of skin diseases and disorders
- k. Identifying common causes for intervertebral disk herniation
- l. Stating causes and treatment modalities for onset of osteoporosis
- m. Comparing and contrasting osteoarthritis and rheumatoid arthritis
- n. Exploring current lab/radiology tests and drug therapy used to detect and treat conditions
- o. diseases of circulatory, respiratory, skin, and musculoskeletal systems

Learning Outcomes

1. Formulate strategies to locate, evaluate, and apply information.
2. Describe how natural systems function and recognize the impact of humans on the environment.

Competency 4:

The student will describe common conditions/diseases, treatment modalities, and outcomes of individuals with disease/disorders of urinary and reproductive systems, and congenital diseases by:

- a. Recognizing the basic structure and functions of the urinary and reproductive systems
- b. Contrasting the differences in the systems and functions of male and female
- c. Explaining the effects of hypertension and diabetes on the urinary system
- d. Describing the etiology and significant manifestations of nephrotic syndrome
- e. Comparing acute and chronic renal failure with regard to common causes, pathophysiology, signs & symptoms, and possible complications
- f. Educating others on common symptoms and treatment of urinary/kidney/bladder infections
Discussing the treatment for common sexually transmitted diseases
- g. Listing age-related diseases for males and females
- h. Identifying trimesters of pregnancy, delivery phases, and puerperium periods
- i. Describing the various types of abortions
- j. Comparing benign prostatic hypertrophy with cancer of the prostate
- k. Describing common congenital diseases/disorders (cystic fibrosis, clubfoot, Hirschsprung's, cleft lip/palate)
- l. Listing requirements of growth charts for children
- m. Naming state mandated diagnostic procedures (phenylketonuria [PKU], vaccines)
- n. Recognizing current drug actions, adverse reactions, contraindications, precautions
- o. Researching a current Gene Therapy trial
- p. Matching common lab/radiology tests and surgical procedures with conditions/diseases of urinary and reproductive systems, and congenital diseases

Learning Outcomes

- a. Formulate strategies to locate, evaluate, and apply information.
- b. Describe how natural systems function and recognize the impact of humans on the environment.

