

LAST REVIEW: 2009-2010

NEXT REVIEW: 2014-2015

STATUS: A

COURSE TITLE: Pathophysiology

COMMON COURSE NUMBER: HIM 1435

CREDIT HOURS: 4

CONTACT HOUR BREAKDOWN

CLOCK HOURS: 0

Lecture: 64

Lab: 0

Clinic: 0

Other: 0

PREREQUISITE(S): HSC 1531

COREQUISITE(S): HIM 1453

PRE/COREQUISITE(S):

COURSE DESCRIPTION:

This course covers the nature, cause, and treatment of human diseases including the diagnostic and therapeutic modalities used for each. This course prepares the HIM student to be able to interpret typical health record data for ICD, CPT coding classification. Basic pharmacological management of various diseases are presented. Upon completion, students should be able to demonstrate an understanding of the diagnosis, management and documentation of human diseases.

UNIT TITLES

1. Basic Concepts of Pathophysiology and Diagnostic and Therapeutic Modalities
2. Basic Concepts of Disease Process
3. The Integumentary System
4. The Musculoskeletal System
5. The Endocrine System
6. The Nervous System and Special Senses
7. The Circulatory System
8. The Respiratory System
9. The Digestive System
10. The Urinary System
11. Fluids & Electrolytes
12. The Reproductive System

EVALUATION:

Please provide a brief description (250 characters maximum) that details how students will be evaluated on the course outcomes.

Assessment, Learning Activities assigned and presentations prepared by students.

***** Complete the following only if course is seeking general education status *****

GENERAL EDUCATION Competencies and Skills *:

Please highlight in green font all Competencies/Skills from the list below that apply to this course. In the box to the right of the Competency/Skill, enter all specific learning outcome numbers (i.e. 1.1, 2.7, 5.12) that apply.

1. Read with critical comprehension	
2. Speak and listen effectively	
3. Write clearly and coherently	
4. Think creatively, logically, critically, and reflectively (analyze, synthesize, apply, and evaluate)	
5. Demonstrate and apply literacy in its various forms: (highlight in green ALL that apply) (1. technological, 2. informational, 3. mathematical, 4. scientific, 5. cultural, 6. historical, 7. aesthetic and/or 8. environmental)	
6. Apply problem solving techniques to real-world experiences	
7. Apply methods of scientific inquiry	
8. Demonstrate an understanding of the physical and biological environment and how it is impacted by human beings	
9. Demonstrate an understanding of and appreciation for human diversities and commonalities	
10. Collaborate with others to achieve common goals.	
11. Research, synthesize and produce original work	
12. Practice ethical behavior	
13. Demonstrate self-direction and self motivation	
14. Assume responsibility for and understand the impact of personal behaviors on self and society	
15. Contribute to the welfare of the community	

* General Education Competencies and Skills endorsed by '05-'06 General Education Task Force

Common Course Number: HIM 1435

UNITS

Unit 1 Basic Concepts of Pathophysiology and Diagnostic and Therapeutic Modalities

General Outcome:

- 1.0** The student shall understand the basic principles, terms and abbreviations related to pathophysiology in general as well as common diagnostic and therapeutic modalities

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 1.1 Describe the general scope of the study of pathophysiology and its related terms and abbreviations.
- 1.2 Describe the general process of diagnosis and its related terms
- 1.3 Describe typical diagnostic modalities and identify their terms
 - 1.3.1 Imaging including basic views and patient positions
 - 1.3.2 Laboratory
 - 1.3.3 Other modalities
- 1.4 Describe the concepts of false positive and false negative
- 1.5 Describe basic pharmacological therapeutic concepts and identify relevant terms and abbreviations
 - 1.5.1 Differentiate between the different classes of drugs and their actions
 - 1.5.2 Identify the various routes of drug administration
 - 1.5.3 Differentiate between the different classes of drugs and their actions
 - 1.5.4 Be familiar with standard drug references, such as drug guides, the PDR, and a formulary
- 1.6 Describe basic non-pharmacological therapeutic modalities and identify relevant terms and abbreviations, including, but not limited to: respiratory therapy, physical therapy, occupational therapy, nuclear and radiation therapy, nutrition therapy.
- 1.7 Identify and utilizes standard medical reference sources.
- 1.8 Identify and interpret medical record data relevant to basic diagnostic and therapeutic modalities.

Unit 2 Basic Concepts of Disease Process

General Outcome:

- 2.0** The student shall be familiar with the basic principles, terms and abbreviations related to basic concepts of disease process.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 2.1** Describe the features of acute and chronic inflammation including burns.
- 2.2** Describe abnormal immune responses, including immunodeficiency, tissue and organ transplant rejection, autoimmune disorders.
- 2.3** Describe the principles of infection and its course.
- 2.4** Describe the characteristics and nomenclature of benign and malignant tumors as well as the methods of staging and treatment malignant tumors.
- 2.5** Describe common congenital and genetic disorders.
- 2.6** Describe common health problems associated with adolescence.
- 2.7** Describe basic concepts of aging and disease process.
- 2.8** Describe the effects of immobility.
- 2.9** Describe the effects of stress.
- 2.10** Describe the characteristics of pain and its management.
- 2.11** Describe the pre-disposing factors and potential complications of substance abuse.
- 2.12** Describe common environmental hazards.
- 2.13** Recognize terms, abbreviations, diagnostic and therapeutic modalities as they apply to general pathophysiological conditions.
- 2.14** Identify the common pharmacological therapies used for general pathophysiological conditions.
- 2.15** Identify and interpret medical record data relevant to general pathophysiological conditions.

Unit 3 Integumentary System

General Outcome:

3.0 The student shall: be familiar with the structure, function, disease process and terms of the integumentary system

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 3.1** Identify the layers of the skin and the accessory structures associated with the integumentary system.
- 3.2** Describe inflammatory disorders of the integumentary system, including, but not limited to: contact dermatitis, urticaria, atopic dermatitis, psoriasis, lichen planus, discoid lupus erythematosus, pemphigus, scleroderma.
- 3.3** Describe skin infections, including, but not limited to: bacterial infections such as cellulitis, furuncles, and impetigo; viral infections such as herpes simplex and herpes zoster; fungal infections such as tinea; and other conditions such as scabies and pediculosis.
- 3.4** Describe skin tumors, including, but not limited to: keratoses, squamous cell carcinoma, malignant melanoma, Kaposi's sarcoma.
- 3.5** Recognize terms, abbreviations, diagnostic and therapeutic modalities as they apply to the integumentary system.
- 3.6** Identify the common pharmacological therapies used for the integumentary system.
- 3.7** Identify and interpret medical record data relevant to the integumentary system.

Unit 4 The Musculoskeletal System

General Outcome:

4.0 The student shall be familiar with the structure, function, disease process and terms of the musculoskeletal system

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 4.1** Describe the structure and function of bones, joints, and skeletal muscles.
- 4.2** Describe various musculoskeletal disease conditions and terms related to trauma, including, but not limited to: bone fractures, dislocations, sprains and strains.
- 4.3** Describe other bone disorders, including, but not limited to: osteoporosis, rickets and osteomalacia, Paget's Disease, and bone tumors.
- 4.4** Describe disorders of the muscle, including, but not limited to: muscular dystrophy.
- 4.5** Describe disorders of the joints, including, but not limited to: osteoarthritis, rheumatoid arthritis, septic arthritis, gout, ankylosing spondylitis.
- 4.6** Identify important laboratory tests, clinical procedures, and terms and abbreviations relating to the musculoskeletal system.
- 4.7** Identify the common pharmacological therapies used for the musculoskeletal system.
- 4.8** Identify and interpret medical record data relevant to the musculoskeletal system.

Unit 5 The Endocrine System

General Outcome:

5.0 The student shall: be familiar with the structure, function, disease process and terms of the endocrine system.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 5.1** Identify the endocrine glands and their hormones.
- 5.2** Describe disorders of the parathyroid hormones and calcium and insulin and diabetes mellitus.
- 5.3** Compare and contrast insulin-dependent and non-insulin-dependent diabetes mellitus.
- 5.4** Disorders of the pituitary hormones, including, but not limited to: growth hormone.
- 5.5** Describe disorders of the antidiuretic hormone, including, but not limited to: diabetes insipidus and inappropriate ADH syndrome.
- 5.6** Describe disorders of the thyroid gland, including, but not limited to: goiter, hyperthyroidism, and hypothyroidism.
- 5.7** Describe disorders of the adrenal gland, including, but not limited to: those of the adrenal medulla and the adrenal cortex.
- 5.8** Identify important laboratory tests, clinical procedures, and terms and abbreviations relating to the endocrine system.
- 5.9** The common pharmacological therapies used for the endocrine system.
- 5.10** Identify and interpret medical record data relevant to the endocrine system.

Unit 6 The Nervous System**General Outcome:**

6.0 The student shall be familiar with the structure, function, disease process and terms of the nervous system

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 6.1** Name, locate, and describe functions of the major organs and parts of the nervous system.
- 6.2** Describe the general effects of neurological dysfunction.
- 6.3** Describe acute neurological problems, including, but not limited to: brain tumors; vascular disorders including transient ischemic attack, cerebrovascular accident, and cerebral aneurysms; infections including meningitis, encephalitis; head injuries; seizure disorders.
- 6.4** Describe congenital and genetic neurological disorders, including, but not limited to: hydrocephalus, spina bifida, and cerebral palsy.
- 6.5** Describe chronic degenerative neurological problems, including, but not limited to: multiple sclerosis, Parkinson's disease, amyotrophic lateral sclerosis, myasthenia gravis, Huntington's disease, and Alzheimer's disease.
- 6.6** Describe spinal cord problems, including herniated intervertebral disc and spinal cord injury.
- 6.7** Describe mental disorders, including, but not limited to: schizophrenia, depression, and panic disorder.
- 6.8** Differentiate among a psychiatrist, a psychologist, and other psychiatric specialist.
- 6.9** Identify the location and function of the major parts of the eye and ear.
- 6.10** Describe disorders of the eye, including, but not limited to: structural defects, infections, trauma, glaucoma, cataracts, and detached retina.
- 6.11** Describe disorders of the ear, including, but not limited to: hearing loss, infections, and Meniere's syndrome.
- 6.12** Identify important laboratory tests, clinical procedures, and terms and abbreviations relating to the nervous system.
- 6.13** Identify the common pharmacological therapies used for the nervous system.
- 6.14** Identify and interpret medical record data relevant to the nervous system.

Unit 7 The Circulatory System

General Outcome:

7.0 The student shall be familiar with the structure, function, disease process and terms of the circulatory system

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 7.1** Identify the structures and normal function of the cardiovascular system including the blood, heart, blood vessels, blood pressure, and the lymphatic system.
- 7.2** Describe the blood dyscrasias, including, but not limited to: the anemias, polycythemia, blood clotting disorders, and the leukemias
- 7.3** Describe heart disorders, including, but not limited to: coronary artery disease or ischemic heart disease including arteriosclerosis and atherosclerosis, angina pectoris and myocardial infarction; cardiac arrhythmias including cardiac arrest; congestive heart failure; congenital heart defects; and inflammation and infection in the heart.
- 7.4** Describe vascular disorders, including, but not limited to: arterial diseases including hypertension, peripheral vascular disease, aneurysms; and venous disorders including thrombophlebitis.
- 7.5** Describe shock.
- 7.6** Describe lymphatic disorders, including, but not limited to: Hodgkin's lymphoma and multiple myeloma.
- 7.7** Recognize terms, abbreviations, diagnostic and therapeutic modalities as they apply to the cardiovascular system.
- 7.8** Identify the common pharmacological therapies used for the cardiovascular system.
- 7.9** Identify and interpret medical record data relevant to the cardiovascular system.

Unit 8 The Respiratory System

General Outcome:

8.0 The student shall The student shall be familiar with the structure, function, disease process and terms of the respiratory system

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 8.1** Identify the normal structure and function of the respiratory system.
- 8.2** Describe general manifestations of respiratory disease
- 8.3** Describe infectious respiratory diseases, including, but not limited to: the upper respiratory tract including the common cold, sinusitis, laryngotracheobronchitis, epiglottitis, and influenza and the lower respiratory tract including bronchiolitis, pneumonia, and tuberculosis.
- 8.4** Describe obstructive lung disease, including, but not limited to: cystic fibrosis, lung cancer, aspiration, and asthma.
- 8.5** Describe the chronic obstructive pulmonary diseases, including, but not limited to: emphysema, chronic bronchitis, and bronchiectasis.
- 8.6** Describe the respiratory vascular disorders, including, but not limited to: pulmonary edema and pulmonary embolus.
- 8.7** Describe the respiratory expansion disorders, but not limited to: atelectasis, pleural effusion, pneumothorax, flail chest, infant respiratory distress syndrome, adult respiratory distress syndrome, and acute respiratory failure.
- 8.8** Recognize terms, abbreviations, diagnostic and therapeutic modalities as they apply to the respiratory system.
- 8.9** Identify the common pharmacological therapies used for the respiratory system.
- 8.10** Identify and interpret medical record data relevant to the respiratory system.

Unit 9 The Digestive System

General Outcome:

9.0 The student shall The student shall be familiar with the structure, function, disease process and terms of the digestive system

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 9.1** Identify the normal structure and function of the digestive system.
- 9.2** Describe common manifestations of the digestive system, including, but not limited to: anorexia, nausea and vomiting, diarrhea, constipation, fluid and electrolyte imbalance, pain, and malnutrition.
- 9.3** Describe upper gastrointestinal tract disorders, including, but not limited to: disorders of the oral cavity, dysphagia, hiatal hernia, gastritis, peptic ulcer, gastric cancer, dumping syndrome, and pyloric stenosis.
- 9.4** Describe disorders of the liver and pancreas, including, but not limited to: gallbladder disorders, jaundice, hepatitis, cirrhosis, cancer of the liver, acute pancreatitis, carcinoma of the pancreas.
- 9.5** Describe lower gastrointestinal disorders, including, but not limited to: celiac disease, chronic inflammatory bowel diseases, appendicitis, diverticular disease, colorectal cancer, intestinal obstruction, and peritonitis.
- 9.6** Recognize terms, abbreviations, diagnostic and therapeutic modalities as they apply to the digestive system.
- 9.7** Identify the common pharmacological therapies used for the digestive system.
- 9.8** Identify and interpret medical record data relevant to the digestive system.

Unit 10 The Urinary System

General Outcome:

10.0 The student shall The student shall be familiar with the structure, function, disease process and terms of the urinary system.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 10.1** Identify the structures and describe normal function of the urinary system.
- 10.2** Describe urinary incontinence and retention.
- 10.3** Describe disorders of the urinary system, including, but not limited to: urinary tract infections and inflammatory disorders.
- 10.4** Describe urinary obstructions, including, but not limited to: urolithiasis and tumors.
- 10.5** Describe urinary vascular disorders, including, but not limited to: nephrosclerosis.
- 10.6** Describe acute and chronic renal failure.
- 10.7** Identify important laboratory tests, clinical procedures, and terms and abbreviations relating to the urinary system.
- 10.8** Identify the common pharmacological therapies used for the urinary system.
- 10.9** Identify and interpret medical record data relevant to the urinary system.

Common Course Number: HIM 1435

Unit 11 Fluids and Electrolytes

General Outcome:

11.0 The student shall The student shall be familiar with key concepts of fluid, electrolyte, and acid-base imbalances.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

11.1 Describe fluid imbalances, including, but not limited to: fluid excess - edema, fluid deficit - dehydration, and third-spacing.

11.2 Describe electrolyte imbalances, including, but not limited to: sodium imbalance, potassium imbalance, calcium imbalance, and imbalance of other electrolytes.

11.3 Describe acid-base imbalance, including, but not limited to: control of serum pH.

11.4 Identify important laboratory tests, clinical procedures, and terms and abbreviations relating to fluid and electrolyte imbalance.

11.5 Identify the common pharmacological therapies used for fluid and electrolyte imbalance.

11.6 Identify and interpret medical record data relevant to fluid and electrolyte imbalance.

Unit 12 Reproductive System

General Outcome:

12.0 The student shall The student shall be familiar with the structure, function, disease process and terms of the reproductive system

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

12.1 Identify the structures and describe normal function of the male reproductive system.

12.2 Describe disorders of the male reproductive system, including, but not limited to: infertility, congenital abnormalities of the penis, disorders of the testes and scrotum, inflammation and infections, and tumors.

12.3 Identify the structures and describe normal function of the female reproductive system.

12.4 Describe disorders of the female reproductive system, including, but not limited to: infertility, structural abnormalities, menstrual disorders, infections, benign tumors, and malignant tumors.

12.5 Describe fetal development.

12.6 Describe the significant physiological changes during pregnancy.

12.7 Describe potential complications of pregnancy, including, but not limited to: pre-eclampsia, eclampsia, placental problems, blood-clotting problems, Rh incompatibility, infection, and adolescent pregnancy.

12.8 Describe sexually transmitted diseases, including, but not limited to: bacterial infections, viral infections, and protozoan infections.

12.9 Identify important laboratory tests, clinical procedures, and terms and abbreviations relating to the reproductive system.

12.10 Identify the common pharmacological therapies used for the reproductive system.

12.11 Identify and interpret medical record data relevant to the reproductive system.