

## FLORIDA STATE COLLEGE AT JACKSONVILLE

## COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER: HIM 1435

COURSE TITLE: Pathophysiology I

PREREQUISITE(S): BSC 2085C

COREQUISITE(S): BSC 2086C

CREDIT HOURS: 2

CONTACT HOURS/WEEK: 2

CONTACT HOUR BREAKDOWN:

Lecture/Discussion: 2

Laboratory:

Other \_\_\_\_\_:

FACULTY WORKLOAD POINTS: 2

STANDARDIZED CLASS  
SIZE ALLOCATION: 24

**CATALOG COURSE DESCRIPTION:** This course presents the nature and cause of human diseases; diagnostic evaluation procedures, complications, treatment, management, and prognosis of disease. Health record documentation is incorporated. A parallel course to BSC 2085C covering: basic concepts of disease, basic concepts of pharmacology, as well as the musculoskeletal, circulatory, lymphatic, digestive, and integumentary systems.

**SUGGESTED TEXT(S):**

Gould, Barbara E. Pathophysiology for the Health-Related Processions. Philadelphia, PA: W.B. Saunders, current edition  
Woodrow, Ruth.

Essentials of Pharmacology for Health Occupations. Albany, NY: Delmar, current edition.

Taber's Cyclopedic Medical Dictionary, Philadelphia, PA: F.A. Davis Company, current edition

Physician's Desk Reference, current edition, Davis' Drug Guide, Philadelphia, PA: F.A. Davis Company, current edition.

**IMPLEMENTATION DATE:** Fall Term, 2002

**REVIEW OR MODIFICATION DATE:** Fall Term, 2002 (20031)

Spring Term, 2007 (20072) (was HIM 1433)  
Fall Term, 2008 (20091) - Outline Review Process 2007

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COURSE TOPICS

CONTACT HOURS  
PER TOPIC

I. Introduction to Disease and Pharmacology	6
A. Brief Introduction and Overview of the Course	
B. Introduction to Pathophysiology	
1. Terms Used in Pathophysiology	
2. Cellular Adaptations	
3. Cell Damage and Necrosis	
4. The Study of Pathophysiology	
C. Introduction to Pharmacology	
1. Consumer Safety and Drug Regulation	
a. Drug Laws	
b. FDA: Food and Drug Administration and DEA: Drug Enforcement Administration	
c. Health Care Workers and the Law	
2. Drug Names and References	
a. Classifications	
b. Identifying Names	
c. Legal Terms Referring to Drugs	
d. Terms Indicating Drug Actions	
e. Drug References	
f. Drug Cards	
3. Sources and Bodily Effects of Drugs	
a. Sources of Drugs	
b. Effects of Drugs	
c. Drug Processing by the Body (Pharmacokinetics)	
d. Absorption	
e. Distribution	
f. Metabolism	
g. Excretion	
h. Other Variables	
i. Unexpected Responses to Drugs	
4. Medication Preparation and Supplies	
a. A Space-Age Drug Form	
b. Standard Drug Forms	
1) Oral Drug Form	
2) Rectal Drug Forms	
3) Injectable Drug Forms	
4) Topical Drug Forms	
5) Inhalable Drug Forms	
c. Supplies	
5. Abbreviations and Systems of Measurement	
a. Abbreviations	
b. Systems of Measurement	
6. Safe Dosage Preparation	
a. Basic Calculation	
b. Pediatric Dosage	

CONTACT HOURS  
PER TOPIC

COURSE TOPICS

- c. Geriatric Dosage
- d. Prevention of Medication Errors
- 7. Responsibilities and Principles of Drug Administration
  - a. Responsible Drug Administration
  - b. Principles of Administration
    - 1) Right Medication
    - 2) Right Amount
    - 3) Right Time
    - 4) Right Route
    - 5) Right Patient
    - 6) Right Documentation
  - c. MedWatch
- 8. Administration by the Gastrointestinal Route
  - a. Orally
  - b. Nasogastric Tube
  - c. Gastric Tube
  - d. Rectally
- 9. Administration by the Parenteral Route
  - a. Sublingual and Buccal Administration
  - b. Transcutaneous Drug Delivery System
  - c. Inhalation Therapy
  - d. Injections
  - e. Skin Medications
  - f. Application to the Mucous Membranes
  - g. Eye Medications
- 10. Poison Control
  - a. Poisoning by Ingestion
  - b. Poisoning by Inhalation
  - c. External Poisoning of Skin or Eyes
  - d. Poisoning by Sting or Snakebite
  - e. People at Risk
- D. Web Sites: Representative sites, including the FDA

II. Basic Concepts of Disease Processes

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- A. Inflammation and Healing
  - 1. Brief Review of Normal Capillary Exchange
  - 2. Inflammation
    - a. Definition
    - b. Causes
  - 3. Acute Inflammation
    - a. Pathophysiology
    - b. Local Effects
    - c. Systemic Effects
    - d. Diagnostic Tests
    - e. Course of the Inflammatory Response

## COURSE TOPICS

- f. Potential Complications
- 4. Chronic Inflammation
  - a. Pathophysiology
- 5. Treatment of Inflammation
- 6. Healing
  - a. Types of Healing
  - b. Factors Affecting Healing
  - c. Complications of Healing by Scar Formation
- 7. Example of Inflammation and Healing
  - a. Burns and Potential Complications of Burns
- B. Abnormal Immune Responses
  - 1. Review of the Immune System
    - a. Purpose of the Immune System
    - b. The Immune Response
    - c. Components of the Immune Systems
    - d. Diagnostic Tests
    - e. The Process of Acquiring Immunity
  - 2. Immunodeficiency
    - a. Causes of Immunodeficiency
    - b. Types of Immunodeficiency
    - c. Effects of Immunodeficiency
    - d. Treatment
  - 3. Tissue and Organ Transplant Rejection
  - 4. Hypersensitivity Reactions
    - a. Type I: Hypersensitivity - Allergy
      - 1) Causative Mechanism
      - 2) Clinical Signs and Symptoms
      - 3) Anaphylaxis
      - 4) Treatment
    - b. Type II: Cytotoxic Hypersensitivity
    - c. Type III: Immune Complex Hypersensitivity
    - d. Type IV: Cell-Mediated or Delayed Hypersensitivity
  - 5. Autoimmune Disorders
    - a. Mechanism
    - b. Example: Systemic Lupus Erythematosus
      - 1) Pathophysiology
      - 2) Clinical Signs and Symptoms
      - 3) Diagnostic Tests
      - 4) Treatment
- C. Infection
  - 1. Review of Microbiology
    - a. Microorganisms

CONTACT HOURS  
PER TOPIC

COURSE TOPICS

- b. Types of Microorganisms
  - 1) Bacteria
  - 2) Viruses
  - 3) Chlamydia, Rickettsiae, and Mycoplasma
  - 4) Fungi
  - 5) Protozoa
- c. Normal Flora
- 2. Principles of Infection
  - a. Transmission
  - b. Host Resistance
  - c. Pathogenicity of Microorganisms
  - d. Control of Transmission
- 3. Development of Infection
  - a. Onset and Course
  - b. Clinical Signs and Symptoms
    - 1) Local Signs
    - 2) Systemic Signs
  - c. Diagnostic Tests
  - d. Antimicrobial Drugs
    - 1) Guides for Use
    - 2) Classification
    - 3) Mode of Action
- 4. Example of Infection: Human Immunodeficiency Virus and Acquired Immunodeficiency Syndrome
  - a. The Agent
  - b. Transmission
  - c. Clinical Signs and Symptoms
  - d. Diagnostic Tests
  - e. Treatment
- 5. Pharmacology: Anti-infective Drugs
- D. Neoplasms
  - 1. Review of Normal Cells
  - 2. Benign and Malignant Tumors
    - a. Nomenclature
    - b. Characteristics of Benign and Malignant Tumors
  - 3. Malignant Tumors - Cancer
    - a. Pathophysiology
      - 1) Local Effects of Tumors
      - 2) Systemic Effects of Cancer
      - 3) Diagnostic Tests
      - 4) Spread of Malignant Tumors
      - 5) Staging of Cancer
    - b. Etiology

## COURSE TOPICS

CONTACT HOURS  
PER TOPIC

- 1) Carcinogenesis
- 2) Risk Factors
- 3) Host Defenses
- c. Treatment
  - 1) Radiation Therapy
  - 2) Chemotherapy
  - 3) Other Drugs
  - 4) Nutrition
- d. Prognosis
4. Examples of Tumors
  - a. Skin Cancer
  - b. Ovarian Cancer
  - c. Brain Tumors
5. Pharmacology: Anti-neoplastic Drugs
- E. Fluid, Electrolyte, and Acid-Base Imbalances
  1. Fluid Imbalances
    - a. Review of Fluid Balance
      - 1) Fluid Compartments
      - 2) Movement of Water
    - b. Fluid Excess - Edema
      - 1) Causes of Edema
      - 2) Effects of Edema
    - c. Fluid Deficit - Dehydration
      - 1) Causes of Dehydration
      - 2) Effects of Dehydration
    - d. Third-Spacing
  2. Electrolyte Imbalances
    - a. Sodium Imbalance
      - 1) Review of Sodium
      - 2) Hyponatremia
      - 3) Hypernatremia
    - b. Potassium Imbalance
      - 1) Review of Potassium
      - 2) Hypokalemia
      - 3) Hyperkalemia
    - c. Calcium Imbalance
      - 1) Review of Calcium
      - 2) Hypocalcemia
      - 3) Hypercalcemia
    - d. Other Electrolytes
      - 1) Magnesium
      - 2) Phosphate
      - 3) Chloride
  3. Acid-Base Imbalance
    - a. Review of Acid-Base Balance

COURSE TOPICS

- b. Control of Serum pH
  - 1) Buffer Systems
  - 2) The Bicarbonate-Carbonic Acid Buffer System and Maintenance of Serum pH
  - 3) Respiratory System
  - 4) Renal System
- c. Acid-Base Imbalance
  - 1) Compensation
  - 2) Acidosis
  - 3) Alkalosis
- 4. Examples of Imbalances
- 5. Pharmacology: Vitamins and Minerals
- F. Web Sites: Representative sites

III. Musculoskeletal Disorders ..... 4

- A. Review of the Musculoskeletal System
  - 1. Bone
  - 2. Skeletal Muscle
  - 3. Joints
  - 4. Diagnostic Tools
- B. Trauma
  - 1. Fractures
    - a. Pathophysiology
    - b. Signs and Symptoms
    - c. Diagnostic Tests
    - d. Treatment
  - 2. Dislocations
  - 3. Sprains and Strains
- C. Bone Disorders
  - 1. Osteoporosis
  - 2. Rickets and Osteomalacia
  - 3. Paget's Disease (Osteitis Deformans)
  - 4. Bone Tumors
- D. Muscle Disorders
  - 1. Muscular Dystrophy
- E. Joint Disorders
  - 1. Osteoarthritis
  - 2. Rheumatoid Arthritis
  - 3. Juvenile Rheumatoid Arthritis
  - 4. Septic (Infectious) Arthritis
  - 5. Gout (Gouty Arthritis)
  - 6. Ankylosing Spondylitis
- F. Pharmacology: Musculoskeletal and Anti-inflammatory Drugs
- G. Case Studies and Health Record Documentation
- H. Web Sites: Representative sites

COURSE TOPICS

IV. Cardiovascular and Lymphatic Disorders

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- A. Review of the Normal Cardiovascular System
  - 1. Blood
  - 2. Heart
  - 3. Blood Vessels
  - 4. Blood Pressure
  - 5. The Lymphatic System
- B. Blood Dyscrasias
  - 1. The Anemias
    - a. Iron Deficiency Anemia
    - b. Pernicious Anemia - Vitamin B-12 Deficiency (Megaloblastic Anemia)
    - c. Aplastic Anemia
    - d. Sickle Cell Anemia (Hemolytic Anemia)
  - 2. Polycythemia
  - 3. Blood-Clotting Disorders
    - a. Hemophilia A
    - b. Disseminated Intravascular Coagulation
  - 4. The Leukemias
- C. Heart Disorders
  - 1. Diagnostic Tests for Cardiovascular Function
  - 2. General Treatment Measures for Cardiac Disorders
  - 3. Coronary Artery Disease or Ischemic Heart Diseases
    - a. Arteriosclerosis and Atherosclerosis
    - b. Angina Pectoris
    - c. Myocardial Infarction
  - 4. Cardiac Arrhythmias (Dysrhythmias)
    - a. Sinus Node Abnormalities
    - b. Atrial Conduction Abnormalities
    - c. Atrioventricular Node Abnormalities: Heart Blocks
    - d. Ventricular Conduction Abnormalities
    - e. Treatment of Cardiac Arrhythmias
    - f. Cardiac Arrest or Standstill
  - 5. Congestive Heart Failure
  - 6. Congenital Heart Defects
    - a. Ventricular Septal Defect
    - b. Valvular Defects
    - c. Tetralogy of Fallot
  - 7. Inflammation and Infection of the Heart
    - a. Rheumatic Fever and Rheumatic Heart Disease
    - b. Infective Endocarditis
    - c. Pericarditis
- D. Vascular Disorders
  - 1. Arterial Diseases

COURSE TOPICS	<u>CONTACT HOURS</u> <u>PER TOPIC</u>
a. Hypertension	
b. Peripheral Vascular Disease and Atherosclerosis	
c. Thromboangiitis Obliterans (Buerger's Diseases)	
d. Raynaud's Syndrome	
e. Aneurysms	
2. Venous Disorders	
a. Varicose Veins	
b. Thrombophlebitis and Phlebothrombosis	
E. Shock	
F. Lymphatic Disorders	
1. Lymphomas	
a. Hodgkin's Disease	
b. Multiple Myeloma or Plasma Cell Myeloma	
H. Case Studies and Health Record Documentation	
I. Pharmacology: Cardiovascular Drugs	
J. Web Sites: Representative sites	
 V. Digestive System Disorders	 .....5
A. Review of the Digestive System	
1. Structures and Their Functions	
2. Neural and Hormonal Controls	
3. Digestion and Absorption	
B. Common Manifestations of Digestive System Disorders	
1. Anorexia, Nausea, and Vomiting	
2. Diarrhea	
3. Constipation	
4. Fluid and Electrolyte Imbalance	
5. Pain	
6. Malnutrition	
C. Basic Diagnostic Tests	
D. Common Therapies	
E. Upper Gastrointestinal Tract Disorders	
1. Disorders of the Oral Cavity	
a. Congenital Defects	
b. Inflammatory Lesions	
c. Infections	
d. Dental Problems	
e. Hyperkeratosis	
f. Cancer of the Oral Cavity	
g. Salivary Gland Disorders	
2. Dysphagia	
3. Hiatal Hernia	
4. Gastritis	
a. Acute Gastritis	

COURSE TOPICS	<u>CONTACT HOURS</u> <u>PER TOPIC</u>
b. Gastroenteritis	
c. Chronic Gastritis	
5. Peptic Ulcer	
a. Gastric and Duodenal Ulcers	
b. Stress Ulcers	
6. Gastric Cancer	
7. Dumping Syndrome	
8. Pyloric Stenosis	
F. Disorders of the Liver and Pancreas	
1. Gallbladder Disorders	
2. Jaundice	
3. Hepatitis - Viral, Toxic or Nonviral	
4. Cirrhosis	
5. Cancer of the Liver	
6. Acute Pancreatitis	
7. Carcinoma of the Pancreas	
G. Lower Gastrointestinal Tract Disorders	
1. Celiac Disease	
2. Chronic Inflammatory Diseases or Inflammatory Bowel Disease	
a. Crohn's Disease (Regional Ileitis or Regional Enteritis)	
b. Ulcerative Colitis	
3. Appendicitis	
4. Diverticular Disease	
5. Colorectal Cancer	
6. Intestinal Obstruction	
7. Peritonitis	
H. Pharmacology: Gastrointestinal Drugs	
I. Case Studies and Health Record Documentation	
J. Web Sites: Representative sites	
VI. Integumentary (Skin) Disorders	.....3
A. Review of the Normal Skin	
B. Skin Lesions	
1. Diagnostic Tests	
2. General Treatment Measures	
C. Inflammatory Disorders	
1. Contact Dermatitis	
2. Urticaria (Hives)	
3. Atopic Dermatitis (Eczema)	
4. Psoriasis	
5. Lichen Planus	
6. Discoid (Cutaneous) Lupus Erythematosus	
7. Pemphigus	
8. Scleroderma	
D. Skin Infections	

COURSE TOPICS

CONTACT HOURS  
PER TOPIC

1. Bacterial Infections
  - a. Cellulitis
  - b. Furuncles (Boils)
  - c. Impetigo
2. Viral Infections
  - a. Herpes Simplex (Cold Sores)
  - b. Herpes Zoster (Shingles)
3. Fungal Infections (Mycoses)
  - a. Tinea
4. Other Infections
  - a. Scabies
  - b. Pediculosis (Lice)
- E. Skin Tumors
  1. Keratoses
  2. Squamous Cell Carcinoma
  3. Malignant Melanoma
  4. Kaposi's Sarcoma
- F. Pharmacology: Skin Medications
- G. Case Studies and Health Record Documentation
- H. Web Sites: Representative sites

PROGRAM TITLE: Health Information Management  
COURSE TITLE: Pathophysiology I  
AS HIM CIP NUMBER: 0317.050600

LIST PERFORMANCE STANDARD ADDRESSED:

Note: The most recent HIM Framework is from 1998 and does not include specific Pathophysiology requirements as indicated in the Coder Framework.

04.0 DEMONSTRATE AN UNDERSTANDING OF AND APPLY WELLNESS AND DISEASE CONCEPTS -- The student will be able to:

- 04.01 Develop a basic understanding of the structure and function of the body systems.
- 04.02 Identify personal health practices and environmental factors, which affect optimal function of each of the major body systems.
- 04.03 Identify psychological reactions to illness including defense mechanisms.
- 04.04 Recognize the steps in the grief process.
- 04.05 Explain basic concepts of positive self image, wellness and stress.
- 04.06 Develop a wellness and stress control plan that can be used in personal and professional life.
- 04.07 Explain the nutrition pyramid.

PROGRAM TITLE: Medical Coder/Biller  
COURSE TITLE: Pathophysiology I  
AS HIM CIP NUMBER: 0317.050603

LIST PERFORMANCE STANDARD ADDRESSED:

04.0 DEMONSTRATE AN UNDERSTANDING OF AND APPLY WELLNESS AND DISEASE CONCEPTS -- The student will be able to:

- 04.01 Develop a basic understanding of the structure and function of the body systems.
- 04.02 Identify personal health practices and environmental factors which affect optimal function of each of the major body systems.
- 04.03 Identify psychological reactions to illness including defense mechanisms.
- 04.04 Recognize the steps in the grief process.
- 04.05 Explain basic concepts of positive self-image, wellness and stress.
- 04.06 Develop a wellness and stress control plan that can be used in personal and professional life.
- 04.07 Explain the nutrition pyramid.

14.0 DEMONSTRATE AN UNDERSTANDING OF THE FUNDAMENTALS OF DISEASE PROCESS IN RELATIONSHIP TO THE HUMAN BODY, INCLUDING PHARMACOLOGY--The student will be able to:

- 14.01 Demonstrate an understanding of the predisposing factors and direct causes of disease as they relate to the human body.
- 14.02 Demonstrate an understanding of the general morphology of organisms and their role in the disease process.
- 14.03 Demonstrate an understanding of the pathogenesis of diseases of all the body systems.



NOTE: Use either the Tab key or mouse click to move from field to field. The box will expand to accommodate your entry.

<i>Section 1</i>	
COURSE PREFIX AND NUMBER: HIM 1435	SEMESTER CREDIT HOURS: 2
COURSE TITLE: <u>Pathophysiology I</u>	

*Section 2*

TYPE OF COURSE: (Click on the box to check all that apply)

<input type="checkbox"/> AA Elective	X	<input checked="" type="checkbox"/> AS Required Professional Course	<input type="checkbox"/> College Prep
<input type="checkbox"/> AS Professional Elective	x	<input checked="" type="checkbox"/> AAS Required Professional Course	<input checked="" type="checkbox"/> Technical Certificate
<input type="checkbox"/> Other _____		<input type="checkbox"/> PSAV	<input type="checkbox"/>
Apprenticeship			
<input type="checkbox"/> General Education: (For General Education courses, you must also complete Section 3 and Section 7)			

*Section 3 (If applicable)*

INDICATE BELOW THE DISCIPLINE AREA FOR GENERAL EDUCATION COURSES:

<input type="checkbox"/> Communications	<input type="checkbox"/> Social & Behavioral Sciences	<input type="checkbox"/> Mathematics
<input type="checkbox"/> Natural Sciences	<input type="checkbox"/> Humanities	

*Section 4*

INTELLECTUAL COMPETENCIES:

X Reading	x Speaking	x Critical Analysis	<input type="checkbox"/> Quantitative Skills	X Scientific Method of Inquiry
X Writing	x Listening	x Information Literacy	<input type="checkbox"/> Ethical Judgment	<input type="checkbox"/> Working Collaboratively

	LEARNING OUTCOMES	METHOD OF ASSESSMENT
•	Demonstrate an understanding of the fundamentals of disease processes in relationship to the human	Written tests, practical exams and clinical performance, written reports
•	Demonstrate a basic knowledge of pharmaceutical chemistry as it relates to the human physiology	Written tests, practical exams and clinical performance, written reports
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*Section 6*

Name of Person Completing This Form: Eudelia Thomas Date: 11/07/2007