

Fayetteville State University
College of Basic and Applied Sciences
Department of Nursing
NURS 325: PATHOPHYSIOLOGY
Fall 2009

I. LOCATOR INFORMATION

Instructor: Indira Tyler, MS, RN
Course: NURS 325 - Pathophysiology
Office Location: Cook Hall, Room 209
Office Hours: TBA
Course Credit: 3 Credit Hours
Office Phone: 672-1930
Curriculum Level: Level III
Class Meets: Online
E-Mail: ityler@uncfsu.edu

FSU Policy on Electronic Mail: Fayetteville State University provides to each student, free of charge, an electronic mail account that is easily accessible via the Internet. The university has established email as the primary mode of communicating with enrolled students about impending deadlines, upcoming events, and other information important to student progression at the university.

Students are responsible for reading their email on a regular basis to remain aware of important information disseminated by the university. The university maintains open-use computer laboratories throughout the campus that can be used to access electronic mail. Students making inquiries via email to FSU faculty and staff about academic records, grades, bills, financial aid, and other matters of confidential nature are required to use their FSU email account.

Rules and regulations governing the use of FSU email may be found at:
<http://www.uncfsu.edu/PDFs/EmailPolicyFinal.pdf>

II. COURSE DESCRIPTION:

This course prepares the student to approach complex situations systematically. Emphasis will be placed on the integration and application of pathophysiological concepts to the holistic human in time of physical stress. This course utilizes the nursing process as the basis for examining persons with pathologies requiring multiple dimensions of nursing care.

PREREQUISITE:

Admission to the program

III. REHABILITATION ACT

In accordance with Section 504 of the 1973 Rehabilitation Act and the Americans with Disabilities Act (ADA) of 1990, we ask if you have a disability or think you have a disability to please make contact with the Center for Personal Development.

Located: Spaulding Building, Room 155 (1st Floor)

Coordinator: Mr. Fred Sapp

Telephone: (910) 672-1203

IV. REQUIRED TEXTBOOKS:

Heuther, S. E. and McCance, K. L. (2008). *Understanding pathophysiology* (4th ed.). St. Louis: Mosby. ISBN: 978-0-323-04990-0

Parkinson, C. F. (2008). Study guide and workbook to accompany understanding pathophysiology (4th ed.). St. Louis: Mosby. ISBN: 978-0-323-04989-4

RECOMMENDED TEXTBOOKS:

Jarvis, C. (2008). *Physical examination and health assessment* (5th ed.). Philadelphia: W. B. Saunders. ISBN: 978-1-4160-3243-4

American Psychological Association (2009). *Publication manual of the American psychological association* (6th ed.). Washington, DC: American Psychological Association. ISBN: 978-14338-0561-5

V. STUDENT LEARNING OUTCOMES AND PROFESSIONAL COMPETENCIES:

At the conclusion of this course, the student will be able to:

1. Apply theoretical knowledge from physical, behavioral, and nursing science of nursing care to individuals and their families experiencing selected health deviations.
2. Describe the impact of pathophysiological alterations on the human condition.
3. Use the nursing process to assess, plan, implement, and evaluate nursing care, promote, maintain, or restore health, or provide support for a peaceful death for adults and children and their families from a variety of ethnic backgrounds.
4. Integrate relevant information, applying critical thinking skills about pharmacological agents, laboratory tests and procedures, and pathophysiology into nursing care for individuals and their families.

5. Apply knowledge about the impact of psychosocial stressors resulting from acute and chronic disease on individuals and their families.
6. Describe the impact of acute and chronic physiological alterations on the adaptive response of humans.
7. Collaborate and communicate with clients, families and other health care professionals in planning and implementing nursing care to adults and children.
8. Integrate relevant research findings in the care of adult and pediatric clients and their families.

VI. COURSE REQUIREMENTS AND EVALUATION CRITERIA

Assignment	Possible Points/%	Description
Unit Examinations	35%	You will complete up to four (4) unit exams for a total of 35% of the course grade. Each exam will consist of 50 multiple choice questions. A test plan will be provided at least one week prior to the exam. Exam content may be from assigned readings, discussion board questions, and online chats.
Final Comprehensive Examination	25%	You will complete a final comprehensive exam. The exam will consist of 75 items. The questions will be multiple choice questions.
Quizzes	15%	You will complete four (4) quizzes for a total of 15% of the course grade. Quiz content is based on the topics/content presented.
Discussion Board	10%	Designed to assist you with mastering course content and to receive additional support in challenging concepts, discussion board exercises are required and will be 10% of the course grade. Please note that the Discussion Board assignments coincide with the weekly topics. Discussion board participation is interactive and a dynamic process.
Pathophysiology Case Study Presentation	15%	A case study (Client Scenario) will be assigned to you. You will present the case in powerpoint format to your classmates. The presentation will be posted in discussion board. A grading rubric will be utilized to guide the presentation.

Grading Scale for the Department of Nursing

A	93 – 100
B	85 – 92
C	78 – 84
D	70 – 77
F	<u>≤ 69</u>

Preparation of written work should contribute to clear communication. All work should be typewritten, following guidelines of the Publication Manual of the American Psychological Association (6th edition), 2009. A cover page and reference page should be included. References should include journals and books other than the ones listed in nursing course textbooks. The APA Manual may be purchased in FSU's Bookstore.

Good writing is an art and craft. Correct grammar facilitates clear communication. Ideas should be developed clearly and logically. Papers with numerous grammatical errors, poor sentence structure, and improper documentation can lose points. A writing center is available on campus if a student needs assistance. All work is expected to be turned in on time.

REVISION OF GRADES – STUDENT RESPONSIBILITIES

The following revisions become effective on August 16, 2007.

WN GRADE DISCONTINUED:

- **WN - Withdrawal due to non-attendance - discontinued, effective August 16, 2007.**

STUDENTS: Do not expect faculty to withdraw you for non-attendance. Drop or withdraw* from classes according to the deadlines published in the catalog. *See warning below about class withdrawals.

NEW TYPE OF GRADE: INTERIM GRADES – (New name for “midterm grade,” with additional purposes). Interim grades will be assigned from the first week of the semester until the deadline for class withdrawals. Interim grades are used for informational and warning purposes only; they are not part of your permanent transcript and have no effect on your GPA. Instructors may assign interim grade of F to warn students of poor academic performance or they may assign “X” or “EA” grades. (See below for explanations) After midterm, faculty will assign all students an interim grade of A – F to inform students of their academic status as of midterm.

- **INTERIM GRADE X = NO SHOW** – Assigned to students who are on a class roster, but never attend class. For warning purposes only; NOT a final grade.

STUDENTS: Check interim grades early in the semester. If you have an X grade, either begin attending the class or withdraw* from it. *See warning below about

class withdrawals. If you do not take action in response to an X grade, you will receive a final grade of FN. (See “FN” below)

- **INTERIM GRADE EA = EXCESSIVE ABSENCES** - Assigned to students whose class absences exceed 10% of the total contact hours. For warning purposes only, NOT a final grade.

STUDENTS: Check your interim grades often. If you have an “EA” grade for a class, you are in jeopardy of failure if you do not take immediate actions. Either resume attending the class or withdraw from it. **See warning below about class withdrawals.*

NEW FINAL GRADE:

- **FN = FAILURE DUE TO NON-ATTENDANCE** – Assigned to students who are on class roster, but never attend the class. An FN grades is equivalent to an F grade in the calculation of the GPA.

STUDENTS: You must attend (or withdraw* from) all the classes for which you are enrolled. **See warning below about class withdrawals.*

WARNING ABOUT CLASS WITHDRAWALS:

- When you withdraw from a class, you are wasting your money and time. You receive no refund for withdrawing from individual classes and you slow your progress toward degree completion.
- If you withdraw from or fail more than one-third of your classes, you will no longer be eligible for financial aid.
- **STRIVE TO EARN CREDIT FOR ALL THE CLASSES IN WHICH YOU ENROLL; WITHDRAW FROM CLASSES ONLY WHEN IT IS ABSOLUTELY NECESSARY!**

Dishonesty In Academic Affairs See FSU Handbook www.uncfosu.edu/policy/policies

VII. ACADEMIC SUPPORT RESOURCES

Academic support resources available in this class are Smarthinking and University College Learning Center.

VIII. COURSE OUTLINE, ASSIGNMENT SCHEDULE, BIBLIOGRAPHY - SEE BELOW.

IX. TEACHING STRATEGIES

- Discussion board, questioning techniques
- Guided and independent practice sessions
- Group and Role playing activities
- Audio-visual aids

X. DISCLAIMER

This syllabus is subject to change. Any change that is made will be provided to the student in writing.

Fayetteville State University
 Department of Nursing
 Pathophysiology Teaching Outline

UNIT 1: Basic Concepts of Pathophysiology: Cellular Biology
 COURSE OUTCOMES: 1, 6

Unit Outcomes	Content Outline	Teaching Strategies/ Learning Outcomes	Web Links	Evaluation
<p>By the end of the unit, the student will be able to</p> <ol style="list-style-type: none"> 1. Describe the structure and function of the nucleus and plasma membrane. 2. Describe the cellular catabolism and the transfer of energy to accomplish other cellular processes. 3. Differentiate between mediated and active transport and passive transport, between endocytosis and exocytosis, and between phagocytosis and pinocytosis. 4. Identify the three mechanisms that bind cells together. 5. Describe the changes in the plasma membrane that result in an action potential. 6. Characterize pattern formation. 7. Identify the location and a major function for each type of tissue: epithelial, connective, muscle, and nervous. 	<ol style="list-style-type: none"> 1. Cellular Functions 2. Structure and Function of Cellular Components 3. Cellular Metabolism 4. Membrane Transport: Cellular Intake and Output 5. Cell-to-Cell Adhesions 6. Cellular Communication and Signal Transduction 7. Tissues 	<ol style="list-style-type: none"> 1. Lecture 2. Assigned Readings, Heuther chapter 1 3. Study Guide, See Parkison, chapter 1 4. Case Studies 5. Class Activities 	<p>http://evolve.elsevier.com/Heuther</p>	<p>Case studies Exams</p>

Fayetteville State University
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 Pathophysiology Teaching Outline

UNIT 1: Basic Concepts of Pathophysiology: Genes and Genetic Disorders
 COURSE OUTCOMES: 1, 2, 4, 5, 6, 7, 8

Unit Outcomes	Content Outline	Teaching Strategies/ Learning Outcomes	Web Links	Evaluation
By the end of the unit, the student will be able to: 1. Characterize chromosome disorders. 2. Cite examples of chromosome disorders. 3. Characterize single-gene disorders. 4. Cite examples of single-gene disorders. 5. Characterize multifactorial inheritance and cite examples.	1. Heredity at the Molecular and Chromosome level 2. Elements of Formal Genetics 3. Transmission of Genetic Diseases 4. Linkage Analysis and Genetic Mapping 5. Multifactorial Inheritance	1. Lecture 2. Assigned Readings, Heuther chapter 2 3. Study Guide, See Parkison chapter 2 4. Case Studies 5. Class Activities	http://evolve.elsevier.com/Heuther	Case studies Exams

Fayetteville State University
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 Pathophysiology Teaching Outline

UNIT 1: Basic Concepts of Pathophysiology: Altered Cellular and Tissue Biology
 COURSE OUTCOMES: 2, 4, 5, 6

Unit Outcomes	Content Outline	Teaching Strategies/ Learning Outcomes	Web Links	Evaluation
<p>By the end of this unit, the student will be able to:</p> <ol style="list-style-type: none"> 1. Describe the cellular adaptations occurring in atrophy, hypertrophy, hyperplasia, dysplasia, and metaplasia and identify the conditions in which each can occur. 2. Identify the mechanism of cellular injury from hypoxia, free radicals, chemicals, unintentional and intentional injuries, infectious agents, immunologic and inflammatory responses, and genetic factors. 3. Identify various cellular accumulations occurring in response to injury and the subsequent manifestations of cellular damage. 4. Identify the major types of cellular necrosis and cite examples of the tissues involved in each type. 5. Compare the different theories of aging. 6. Characterize somatic death and its manifestations. 	<ol style="list-style-type: none"> 1. Cellular Adaptation 2. Cellular Injury 3. Manifestation of Cellular Injury 4. Cellular Death 5. Aging and Altered Cellular and Tissue Biology 6. Cellular and Somatic Death 	<ol style="list-style-type: none"> 1. Lecture 2. Assigned Readings, Heuther chapter 3 3. Study Guide, See Parkinson chapter 3 4. Case Studies 5. Class Activities 	<p>http://evolve.elsevier.com/Heuther</p>	<p>Case studies Exams</p>

Fayetteville State University
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 Pathophysiology Teaching Outline

UNIT 1: Basic Concepts of Pathophysiology: Fluids and Electrolytes, Acids and Bases
 COURSE OUTCOMES: 1, 2, 4, 5, 6

Unit Outcomes	Content Outline	Teaching Strategies/ Learning Outcomes	Web Links	Evaluation
<p>By the end of this unit, the student will be able to:</p> <ol style="list-style-type: none"> 1. Identify the mechanisms causing edema. 2. Define isotonic, hypertonic, and hypotonic water and solute alterations. 3. Identify the major consequences of abnormal levels of sodium, potassium, calcium, phosphate, and magnesium. Define the terms associated with excess or deficit of each electrolyte. 4. Differentiate between metabolic/respiratory acidosis and metabolic/respiratory alkalosis. 5. Describe what is meant by the “anion gap” and explain the significance of an abnormal gap in metabolic acidosis. 	<ol style="list-style-type: none"> 1. Distribution of Body Fluids 2. Alterations in Water Movement 3. Sodium, Chloride, and Water Balance 4. Alterations in Sodium, Chloride, and Water Balance 5. Alterations in Potassium and Other Electrolytes 6. Acid-Base Balance 	<ol style="list-style-type: none"> 1. Lecture 2. Assigned Readings, Heuther chapter 4 3. Study Guide, See Parkinson chapter 4 4. Case Studies 5. Class Activities 	<p>http://evolve.elsevier.com/Heuther</p>	<p>Exams Case studies</p>

Fayetteville State University
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 Pathophysiology Teaching Outline

UNIT 1: Mechanisms of Self Defense: Immunity
 COURSE OUTCOMES: 2, 4, 5, 6, 8

Unit Outcomes	Content Outline	Teaching Strategies/ Learning Outcomes	Web Links	Evaluation
<p>By the end of this unit, the student will be able to:</p> <ol style="list-style-type: none"> 1. Distinguish between natural and acquired immunity between humoral and cell-mediated immunity, and between central and peripheral lymphoid organs. 2. Describe the role of the B cell in humoral immunity. 3. Identify the structure and an important role for each of the five classes of immunoglobulins. 4. Describe the secretory immune system. 5. Describe the role of the T cell in cellular immunity. 6. Distinguish between primary and secondary immune responses. 7. Characterize the interaction within immune response. 8. Compare pediatric immune function to immune function in the elderly. 	<ol style="list-style-type: none"> 1. Characteristics of the Immune Response 2. Antigens 3. Humoral Immune Response 4. Cell-Mediated Immune Response 5. Induction of the Immune Response 6. Cellular Interactions in the Immune Response 7. Pediatrics & Immune Functions 8. Aging & Immune Function 	<ol style="list-style-type: none"> 1. Lecture 2. Assigned Readings, Heuther chapter 5 3. Study Guide, See Parkinson, chapter 5 4. Case Studies 5. Class Activities 	<p>http://evolve.elsevier.com/Heuther</p>	<p>Exams Case studies</p>

Fayetteville State University
 Department of Nursing
 Pathophysiology Teaching Outline

UNIT 1: Mechanisms of Self Defense: Inflammation
 COURSE OUTCOMES: 2, 4, 5, 6, 8

Unit Outcomes	Content Outline	Teaching Strategies/ Learning Outcomes	Web Links	Evaluation
<p>By the end of this unit, the student will be able to:</p> <ol style="list-style-type: none"> 1. Describe inflammation and contrast it to immunity. 2. Indicate the causes of mast cell degranulation and the effects of vasoactive amines and chemotactic factors. 3. State the effects of the synthetic products of the mast cell. 4. Identify the plasma protein systems and their interactions in inflammation. 5. Identify a role for neutrophils, monocytes, macrophages, and eosinophils in the inflammatory process. 6. State the roles for inflammatory cytokines. 7. Name and describe the local and systemic manifestations of inflammation. 8. Characterize chronic inflammation. 9. Differentiate between resolution and repair processes; identify the adverse factors affecting wound healing. 10. Compare pediatric to aging self-defense mechanisms 	<ol style="list-style-type: none"> 1. The Acute Inflammatory Response 2. The Mast Cell 3. Plasma Protein Systems 4. Cellular Components of Inflammation 5. Cellular Products 6. Local Manifestation of Acute Inflammation 7. Systemic Manifestation of Acute Inflammation 8. Chronic Inflammation 9. Resolution and Repair 10. Pediatric and Aging Factors Affecting Mechanisms of Self Defense 	<ol style="list-style-type: none"> 1. Lecture 2. Assigned Readings, Heuther chapter 6 3. Study Guide, see Parkinson chapter 6 4. Case studies 5. Class Activities 	<p>http://evolve.elsevier.com/Heuther</p>	<p>Exams Case studies</p>

Fayetteville State University
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 Pathophysiology Teaching Outline

UNIT 1: Mechanisms of Self Defense: Hypersensitivities, Infection and Immunodeficiencies & Stress and Disease
 COURSE OUTCOMES: 2, 4, 5, 6, 8

Unit Outcomes	Content Outline	Teaching Strategies/ Learning Outcomes	Web Links	Evaluation
<p>By the end of this unit, the student will be able to:</p> <ol style="list-style-type: none"> 1. Compare the four hypersensitivities. 2. Describe the likely causes of autoimmune and alloimmune diseases; cite examples. 3. Describe the relationships between humans and infectious agents 4. Describe the mechanisms of infection and cellular injury by bacteria, viruses, and fungi. 5. Characterize immunodeficiencies; describe examples of congenital or primary diseases. 6. Cite causes and consequences of acquired or secondary immune deficiencies. 7. Describe acquired immune deficiency syndrome (AIDS) 8. Describe some laboratory tests and replacement therapies for immunodeficiencies. 9. Cite examples of stress-related disease 10. Describe stress and coping 	<ol style="list-style-type: none"> 1. Hypersensitivity: Allergy, Autoimmunity, and Alloimmunity 2. Infection 3. Immunodeficiencies 4. Concepts of Stress 5. The Stress Response 6. Stress, Personality, Coping, and Illness 7. Aging and Stress-Age Syndrome 	<ol style="list-style-type: none"> 1. Lecture 2. Assigned Readings, Heuther chapter 7 and 8 3. Study Guide, see Parkinson chapter 7 and 8 4. Case studies 5. Class activities 	<p>http://evolve.elsevier.com/Heuther</p>	<p>Exams Case studies</p>

Fayetteville State University
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 Pathophysiology Teaching Outline

UNIT 1: Mechanisms of Self Defense: Cancer
 COURSE OUTCOMES: 2, 4, 5, 6, 8

Unit Outcomes	Content Outline	Teaching Strategies/ Learning Outcomes	Web Links	Evaluation
<p>By the end of this unit, the student will be able to:</p> <ol style="list-style-type: none"> 1. Define neoplasia or cancer 2. Cite the method for naming and classifying tumors, provide examples 3. Contrast the properties of benign versus malignant tumors. 4. Identify the stages of cancer spread 5. Characterize tumor markers, cite some examples 6. Postulate a model for the causes of neoplasia or cancer 7. Describe prerequisites for metastasis to occur 8. Describe the proposed sequence of events during tumor cell invasion of extracellular matrix 9. Describe avenues for metastatic 10. Compare the modalities for the treatment of neoplasms; identify the advantages of immune therapy. 11. Identify side effects of cancer treatment 12. Compare childhood neoplasms to adult neoplasms 13. Describe the incidence and types of childhood cancers. 14. Describe the etiologic factors for childhood cancers and prognosis for childhood cancers 	<ol style="list-style-type: none"> 1. Cancer Characteristics and Terminology 2. The Genetic basis of Cancer 3. Gene-Environment Interaction 4. Tumor Manifestations 5. Tumor Spread 6. Clinical Manifestations of Cancer 7. Side Effects of Cancer Treatment 8. Incidence and Types of Childhood Cancers: Etiology and Prognosis 	<ol style="list-style-type: none"> 1. Lecture 2. Assigned Readings, Heuther chapter 9, 10, and 11 3. Study Guide, see Parkinson, chapter 9, 10, and 11 4. Case Studies 5. Class Activities 	<p>http://evolve.elsevier.com/ Heuther</p>	<p>Exam Case studies</p>

Fayetteville State University
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 Pathophysiology Teaching Outline

UNIT 2: Body Systems and Disease: The Neurological System
 COURSE OUTCOMES: 2, 4, 5, 6, 8

Unit Outcomes	Content Outline	Teaching Strategies/ Learning Outcomes	Web Links	Evaluation
<p>By the end of this unit, the student will be able to:</p> <ol style="list-style-type: none"> 1. Compare the functions of neurons with those of neuroglia. 2. Describe the circumstances under which nervous tissue can regenerate. 3. Describe transmission of impulses by neurotransmitters. 4. Identify the three main divisions of the brain; characterize their associated structures and functions. 5. Identify the significance of decussation of motor fibers 6. Identify the structures responsible for maintaining and protecting the central nervous system 7. Identify the route of blood circulation within the central nervous system; note the significance of the circle of Willis 8. Identify the subdivision of the autonomic nervous system, their origins, and general functions 9. Identify the type of neurotransmitter secreted by preganglionic and postganglionic fibers in the autonomic nervous systems 10. Identify the structural, cellular, vascular, and functional changes that occur with aging. 	<ol style="list-style-type: none"> 1. Overview and Organization of the Nervous System 2. Cells of the Nervous System 3. The Nerve Impulse 4. The Central Nervous System 5. The Peripheral Nervous System 6. The Autonomic Nervous System 7. Aging and the Nervous System 	<ol style="list-style-type: none"> 1. Lecture 2. Assigned Readings, Heuther chapter 12 3. Study Guide, see Parkinson chapter 12 4. Case Studies 5. Class activities 	<p>http://evolve.elsevier.com/Heuther</p>	<p>Exam Case studies</p>

Fayetteville State University
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 Pathophysiology Teaching Outline

UNIT 2: Body Systems and Disease: The Neurological System
 COURSE OUTCOMES: 1, 2, 3, 4, 5, 6, 7, 8

Unit Outcomes	Content Outline	Teaching Strategies/ Learning Outcomes	Web Links	Evaluation
<p>By the end of the unit, the student will be able to:</p> <ol style="list-style-type: none"> 15. Describe pain modulation and note stimuli that activate nociceptors. 15. Differentiate among categories of pain. 15. Describe the alterations occurring in fever, hyperthermia, and hypothermia <ol style="list-style-type: none"> 4. Describe sleep disorders 5. Identify common diseases that are associated with the special senses and describe their etiologies and manifestations. 6. Identify sites and causes for alterations in arousal. 7. Summarize the changes in level of consciousness, papillary response, muscle tone, and respiratory activity as the diencephalons through the medulla is affected 8. Distinguish between cerebral and brain death. 9. Define seizure and cite conditions associated with seizure disorders. 10. Characterize the stages of increased intracranial pressure 11. Show the relationship between pyramidal and extrapyramidal motor syndromes and between upper motor neuron and lower motor neuron syndromes. 	<ol style="list-style-type: none"> 1. Pain Experience 2. Temperature Regulation 3. Sleep Disorders 4. Special Senses 5. Somatosensory Function 6. Alterations in Cognitive Networks 7. Alterations in Cerebral Homeostasis 8. Alterations in Motor Function 	<ol style="list-style-type: none"> 1. Lecture 2. Assigned Readings, Heuther chapter 13 and 14 3. Study Guide, see Parkinson chapter 13 and 14 4. Case Studies 5. Class Activities 	<p>http://evolve.elsevier.com/Heuther</p>	<p>Exam Case studies</p>

Fayetteville State University
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UNIT 2: Body Systems and Disease: The Neurological System
 COURSE OUTCOMES: 1, 2, 3, 4, 5, 6, 7, 8

Unit Outcomes	Content Outline	Teaching Strategies/ Learning Outcomes	Web Links	Evaluation
<p>By the end of this unit, the student will be able to:</p> <ol style="list-style-type: none"> 1. Differentiate between focal and diffuse brain trauma. 2. Discuss pathogenesis and manifestations of spinal cord injuries. 3. Describe degenerative disorders of the spine. 4. Compare and contrast cerebrovascular accidents. 5. Compare meningitis with encephalitis. 6. Characterize CNS abscesses 7. Identify the neurologic complications of AIDS 8. Describe Alzheimer disease. 9. Distinguish among the degenerative diseases of Parkinson, Huntington, multiple sclerosis, and amyotrophic lateral sclerosis (ALS) 10. Describe peripheral nervous system disorders; characterize myasthenia gravis 11. Describe pathophysiology, manifestations and treatment of CNS tumors 12. Describe the major forms of central nervous system malformations. 13. Compare and contrast the encephalopathic processes of cerebral palsy, phenylketonuria, and Reye syndrome. 14. Describe the seizure disorders of children, noting their manifestations 15. Identify the most common pathogens responsible for bacterial meningitis in infancy and childhood 	<ol style="list-style-type: none"> 1. Disorders of the Central Nervous System 2. Peripheral Nervous System and Neuromuscular Joint Disorders 3. Tumors of the Central Nervous System 4. Normal Growth and Development of the Nervous System 5. Structural Malformations 6. Encephalopathies 7. Human Immunodeficiency Virus and Central Nervous System Involvement 8. Tumors 	<ol style="list-style-type: none"> 1. Lecture 2. Assigned Readings, Heuther chapter 15 and 16 3. Study Guide, see Parkinson chapter 15 and 16 4. Case Studies 5. Class activities 	<p>http://evolve.elsevier.com/Heuther</p>	<p>Exam Case studies</p>

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UNIT 2: Body Systems and Disease: The Pulmonary System
COURSE OUTCOMES: 1, 2, 3, 4, 5, 6, 7, 8

Unit Outcomes	Content Outline	Teaching Strategies/ Learning Outcomes	Web Links	Evaluation
<p>By the end of this unit, the student will be able to:</p> <ol style="list-style-type: none"> 1. Describe lung volumes and capacities. 2. Describe neurochemical control of ventilation. 3. Identify the factors in the transport of oxygen to the cells of the body and describe oxyhemoglobin association and disassociation; identify the factors in the transport of carbon dioxide from the cells. 4. Characterize lung conditions that are caused by pulmonary disease or injury. 5. Characterize the pathogenic factors in adult respiratory distress syndrome (ARDS). 6. Compare and contrast the obstructive pulmonary diseases. 7. Describe the pathogenesis of tuberculosis 8. Compare and contrast pulmonary embolism, pulmonary hypertension and cor pulmonale. 9. Describe the major histologic types of lung cancer 10. Identify two different forms of croup and differentiate between them by respective etiologies, anatomic involvement, and seriousness. 11. Describe foreign body aspiration in infants and children. 12. Describe obstructive sleep apnea. 13. Describe pathophysiologic processes involved in respiratory distress syndrome of the newborn 14. Describe bronchopulmonary dysplasia 15. Identify the most common etiologic agent in 	<ol style="list-style-type: none"> 1. Structures of the Pulmonary Systems 2. Punction of the Pulmonary System 3. Aging and the Pulmonary System 4. Clinical Manifestations of Pulmonary Alterations 5. Pulmonary Disorders 6. Pulmonary Disorders in Children 7. Sudden Infant Death Syndrome 	<ol style="list-style-type: none"> 1. Lecture 2. Assigned Readings, Heuther chapter 25, 26 and 27 3. Study Guide, see Parkinson chapter 25, 26 and 27 4. Case Studies 5. Class activities 	<p>http://evolve.elsevier.com/ Heuther</p>	<p>Exam Case studies</p>

<p>bronchiolitis; describe the pathophysiology and usual clinical course of the disease.</p> <p>16. Describe the most common etiologic agents of pneumonias in children</p> <p>17. Describe the pathophysiologic processes, manifestations, and treatment of asthma</p> <p>18. Describe the pulmonary pathophysiology associated with cystic fibrosis and identify general modes of diagnostic testing and therapy</p> <p>19. Describe SIDS</p>				
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Pathophysiology Teaching Outline

UNIT 2: Body Systems and Disease: The Cardiovascular and Lymphatic System

COURSE OUTCOMES: 1, 2, 3, 4, 5, 6, 7, 8

Unit Outcomes	Content Outline	Teaching Strategies/ Learning Outcomes	Web Links	Evaluation
<p>By the end of this unit, the student will be able to:</p> <ul style="list-style-type: none"> 22. Describe the initiation of and conduction sequence of electrical impulses through the heart; identify the autonomic innervation and its effects on the heart. 22. Use the Frank-Starling law and Laplace law to demonstrate interrelationships that affect cardiac function ; indicate the influence of reflexes on heart rate. 22. Describe the determinants of blood flow. 22. Identify the factors that regulate arterial and venous blood pressure. 22. Note the changes that aging causes in the cardiovascular system. 22. Distinguish between arteriosclerosis and atherosclerosis; describe the development of atheromatous plaque and its manifestations. 22. Distinguish between primary, secondary, complicated, and malignant hypertension. 22. Define and identify the causes of orthostatic or postural hypotension 22. Define aneurysm and list the types. 22. Distinguish between a thrombus and an embolus. 22. Distinguish between arterial and venous 	<ul style="list-style-type: none"> 1. The Circulatory System 2. The Heart 3. Aging and Cardiovascular Function 4. The Systemic Circulation 5. The Lymphatic System 6. Diseases of the Arteries and Veins 7. Disorders of the Heart Wall 8. Shock 9. Manifestations of Heart Disease 10. Congenital Heart Disease 11. Acquired Cardiovascular Disorders in Children 	<ul style="list-style-type: none"> 1. Lecture 2. Assigned Readings, Heuther chapter 22 , 23 and 24 3. Study Guide, see Parkinson chapter 22, 23 and 24 4. Case Studies 5. Class Activities 	<p>http://evolve.elsevier.com/Heuther</p>	<p>Exam Case studies</p>

<p>occlusive disease.</p> <p>22. Characterize coronary artery disease; distinguish between myocardial ischemia and myocardial infarction and list complications of each.</p> <p>22. Characterize the terms associated with pericardial disease.</p> <p>22. Compare the cardiomyopathies.</p> <p>22. Identify the causes and manifestation of valvular dysfunction</p> <p>22. Distinguish between rheumatic heart disease and infective endocarditis</p> <p>22. Characterize dysrhythmias of the heart.</p> <p>22. Discuss contractility, preload, and afterload as mechanisms for heart failure</p> <p>22. Describe high-output heart failure.</p> <p>22. Characterize impaired cellular metabolism because of shock.</p> <p>22. Classify the different types of shock by etiology.</p> <p>22. Describe events and types of shock and relate the events to the signs and symptoms of shock; describe the sequence of multiple organ dysfunction syndrome (MODS) because of shock.</p> <p>23. Identify the most common congenital defects that obstruct outflow and describe their pathophysiology.</p> <p>24. Describe congenital defects with increased pulmonary blood flow and their pathophysiology and treatment.</p> <p>25. Describe the congenital defects with decreased pulmonary blood flow and their pathophysiology and treatment.</p> <p>26. Describe defects that permit mixing of pulmonary and systemic blood.</p>				
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<p>27. Relate congestive heart failure to congenital heart disease in children</p> <p>28. Describe the pathophysiology related to Kawasaki disease.</p> <p>29. Describe susceptibility and manifestations of systemic hypertension in children</p>				
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UNIT 2: Body Systems and Disease: The Digestive System
 COURSE OUTCOMES: 1, 2, 3, 4, 5, 6, 7, 8

Unit Outcomes	Content Outline	Teaching Strategies/ Learning Outcomes	Web Links	Evaluation
<p>By the end of this unit, the student will be able to:</p> <ol style="list-style-type: none"> 1. Describe the functional layers of the gastrointestinal tract 2. Explain the relationship between cell types and function of the exocrine pancreas. 3. Describe the alterations in the digestive system associated with normal aging. 4. Compare and contrast the various disorders of digestive motility. 5. Compare duodenal, gastric, and stress ulcers; identify the complications of surgical management of ulcers 6. Characterize the disorders of overnutrition and undernutrition 7. Describe the complications of liver dysfunction 8. Describe the pathogenesis of pancreatitis. 9. Characterize the various cancers of the digestive system 10. Describe the pathophysiology and treatment associated with cleft lip and palate. 11. Describe the structural defects of esophageal atresia and tracheoesophageal fistula. 12. Describe the structural defect and pathophysiology associated with pyloric stenosis, meconium ileus, intussusception, gastroesophageal reflux, and cystic fibrosis 13. Describe physiologic jaundice of the newborn. 	<ol style="list-style-type: none"> 1. The Gastrointestinal Tract 2. Accessory Organs of Digestion 3. Disorders of the Gastrointestinal Tract 4. Disorders of the Accessory Organs of Digestion 5. Cancer of the Digestive System 6. Alterations of Digestive Function in Children 7. Disorders of the Liver in Children 	<ol style="list-style-type: none"> 1. Lecture 2. Assigned Readings, Heuther chapter 33, 34 and 35 3. Study Guide, see Parkinson chapter 33, 34 and 35 4. Case studies 5. Class activities 	<p>http://evolve.elsevier.com/Heuther</p>	<p>Exams Case studies</p>

Fayetteville State University
 Department of Nursing
 Pathophysiology Teaching Outline

UNIT 2: Body Systems and Disease: The Endocrine and Hematologic Systems
 COURSE OUTCOMES: 1, 2, 3, 4, 5, 6, 7, 8

Unit Outcomes	Content Outline	Teaching Strategies/ Learning Outcomes	Web Links	Evaluation
<p>By the end of this unit, the student will be able to:</p> <ol style="list-style-type: none"> 1. Identify the functions of the endocrine system and describe the regulation of hormone secretion. 2. Classify the types of hormones, their receptors, and proposed mechanisms of action. 3. Cite the physiologic effects of parathyroid hormone and the variables that affect its secretions. 4. Identify the mechanisms causing hormonal alterations. 5. Identify the constituents of blood plasma. 6. Identify the structural characteristics, normal values, and functions of the cellular elements of blood. 7. Identify the mechanisms causing alterations of hematologic function 8. Describe the etiology of childhood iron deficiency anemia and identify appropriate diagnostic and treatment measure 9. Describe childhood sickle cell disease and identify its most common forms of presentation. 10. Describe thalassemias. 11. Describe childhood hemophilias and their complications 12. Describe proposed causative factors and common manifestations for childhood leukemias. 	<ol style="list-style-type: none"> 1. Mechanisms of Hormonal Regulation 2. Structure and Function of the Endocrine Glands 3. Aging and its Effects on Specific Endocrine Glands 4. Mechanisms of Hormonal Alterations 5. Alterations of Hypothalamic-Pituitary System 6. Alterations of Thyroid Function 7. Alterations of Parathyroid Function 8. Dysfunction of the Endocrine Pancreas 9. Alterations of Adrenal Function 	<ol style="list-style-type: none"> 1. Lecture 2. Assigned Readings, Heuther chapter 17, 18, 19, 20 and 21 3. Study Guide, see Parkinson chapter 17, 18, 19, 20 and 21 4. Case studies 5. Class activities 	<p>http://evolve.elsevier.com/ Heuther</p>	<p>Exams Case studies</p>

Fayetteville State University
 Department of Nursing
 Pathophysiology Teaching Outline

UNIT 2: Body Systems and Disease: The Musculoskeletal Systems
 COURSE OUTCOMES: 1, 2, 3, 4, 5, 6, 7, 8

Unit Outcomes	Content Outline	Teaching Strategies/ Learning Outcomes	Web Links	Evaluation
<p>By the end of this unit, the student will be able to:</p> <ol style="list-style-type: none"> 1. Identify the structural elements and function of bone. 2. Describe the process of bone remodeling and healing. 3. Classify joints structurally and functionally. 4. Indicate the types of skeletal muscle contractions and the interaction between groups of muscles. 5. Compare the types of fractures; describe the causes, manifestations, and treatment of fractures 6. Describe alterations of Musculoskeletal Function 7. Describe congenital musculoskeletal defects in children 8. Describe bony infections among children 9. Characterize common benign bone tumors of childhood 	<ol style="list-style-type: none"> 1. Structure and Function of Bones 2. Structure and Function of Joints 3. Structure and Function of Skeletal Muscles 4. Aging and the Musculoskeletal System 5. Musculoskeletal Injuries 6. Disorders of the Bones, Joints, and Skeletal Muscle 7. Musculoskeletal Tumors 8. Congenital Defects 9. Bone Infection 10. Alterations of Musculoskeletal Function in Children 	<ol style="list-style-type: none"> 1. Lecture 2. Assigned Readings, Heuther chapter 22 , 23 and 24 3. Study Guide, see Parkinson chapter 22, 23 and 24 4. Case Studies 5. Class Activities 	<p>http://evolve.elsevier.com/Heuther</p>	<p>Exams Case studies</p>

Fayetteville State University
 Department of Nursing
 Pathophysiology Teaching Outline

UNIT 2: Body Systems and Disease: The Integumentary System
 COURSE OUTCOMES: 1, 2, 3, 4, 5, 6, 7, 8

Unit Outcomes	Content Outline	Teaching Strategies/ Learning Outcomes	Web Links	Evaluation
<p>By the end of this unit, the student will be able to:</p> <ol style="list-style-type: none"> 1. Identify the causes and lesions of inflammatory and papulosquamous disorders of the skin 2. Identify the causes and lesions of cutaneous infections 3. Identify diseases caused by insect bites 4. Compare the benign tumors of the skin. 5. Describe malignant skin lesions 6. Classify burns according to the extent of injury 7. Describe disorders of the hair and nails. 8. Differentiate between atopic and diaper dermatitis in infants and children 8. Describe the infections in children of the skin 9. Compare and contrast the congenital vascular disorders 	<ol style="list-style-type: none"> 1. Structure and Function of the Skin 2. Disorders of the Skin 3. Disorders of the Hair and Nail 4. Alterations of the Integument in Children 	<ol style="list-style-type: none"> 1. Lecture 2. Assigned Readings, Heuther chapter 39 and 40 3. Study Guide, see Parkinson chapter 17, 18, 19, 20 and 21 4. Case studies 5. Class activities 	<p>http://evolve.elsevier.com/Heuther</p>	<p>Exams Case studies</p>

Fayetteville State University
 Department of Nursing
 Pathophysiology Teaching Outline

UNIT 2: Body Systems and Disease: The Renal and Urologic System
 COURSE OUTCOMES: 1, 2, 3, 4, 5, 6, 7, 8

Unit Outcomes	Content Outline	Teaching Strategies/ Learning Outcomes	Web Links	Evaluation
<p>By the end of this unit, the student will be able to:</p> <ol style="list-style-type: none"> 1. Describe and identify the organs of the urinary system and the gross anatomic features of the kidneys 2. Describe the purposes of the countercurrent exchange system 3. Identify the changes that occur in renal function with advancing age. 4. Describe the general features of urinary tract obstruction. 5. Describe renal and bladder tumors 6. Compare and contrast the signs, symptoms and etiology of cystitis and pyelonephritis. 7. Identify the predisposing risk factor and the most likely pathogens responsible for urinary tract infections. 8. Describe the types of glomerulonephritis, its features, manifestations and treatment. 9. Describe chronic renal failure; identify the systemic manifestations of uremia 10. Describe the common congenital/structural anomalies that occur within the renal and urologic system 11. Describe alterations of renal and urinary tract function in children 12. Characterize nephroblastoma. 	<ol style="list-style-type: none"> 1. Structures of the Renal System 2. Renal Blood Flow 3. Kidney Function 4. Pediatrics and Renal Function 5. Aging and Renal Function 6. Urinary Tract Obstruction 7. Urinary Tract Infection 8. Glomerular Disorders 9. Renal Failure 10. Structural Abnormalities 11. Glomerular Disorders 12. Obstructive Disorders 13. Nephroblastoma 14. Enuresis 	<ol style="list-style-type: none"> 1. Lecture 2. Assigned Readings, Heuther chapter 39 and 40 3. Study Guide, see Parkinson chapter 17, 18, 19, 20 and 21 4. Case studies 5. Class activities 	<p>http://evolve.elsevier.com/Heuther</p>	<p>Exams Case studies</p>

Fayetteville State University
 Department of Nursing
 Pathophysiology Teaching Outline

UNIT 2: Body Systems and Disease: The Reproductive System
 COURSE OUTCOMES: 1, 2, 3, 4, 5, 6, 7, 8

Unit Outcomes	Content Outline	Teaching Strategies/ Learning Outcomes	Web Links	Evaluation
<p>By the end of this unit, the student will be able to:</p> <ol style="list-style-type: none"> 1. Describe the hormonal stimulation of the reproductive systems; note secondary sex characteristics 2. Describe the menstrual cycle, noting its differential hormonal effects, levels, and cellular events 3. Describe spermatogenesis and male sex hormones 4. Identify structure of and cyclical hormones associated with female breast tissue; describe lymphatic drainage. 5. Identify changes in the female and male reproductive systems that occur with advancing age 6. Distinguish between various menstrual disorders and their hormonal alterations or causes; identify manifestations of premenstrual syndrome 7. Describe common disorders of the female and male reproductive systems 8. Discuss the current status of sexually transmitted infections. 	<ol style="list-style-type: none"> 1. Development of the Reproductive systems 2. The Female Reproductive System 3. The Male Reproductive System 4. Structure and Function of the Breast 5. Alterations of Sexual Maturation 6. Disorders of the Female and Male Reproductive Systems 7. Disorders of the Breast 8. Sexually Transmitted Infections 	<ol style="list-style-type: none"> 1. Lecture 2. Assigned Readings, Heuther chapters 31 and 32 3. Study Guide, see Parkinson chapter 31 and 32 4. Case Studies 5. Class Activities 	<p>http://evolve.elsevier.com/ Heuther</p>	<p>Exams Case studies</p>

COURSE OUTLINE AND ASSIGNMENT SCHEDULE

DATE	TOPIC	ASSIGNED READINGS
WK 1	Course Overview/Guidelines	
	BASIC CONCEPTS Cell Biology Genes and Genetic Diseases Altered Cellular and Tissue Biology	Chapters 1 and 2 Chapter 3
WK 2	QUIZ Fluid and Electrolytes, Acids and Bases	Chapter 4
WK 3	UNIT EXAM MECHANISMS OF SELF-DEFENSE Innate Defense, Adaptive Immunity Hypersensitivity, Infection, and Immune Deficiencies, Stress and Disease	Chapters 5, 6, 7, and 8
	CELLULAR PROLIFERATION Biology of Cancer and Tumor Spread Cancer Epidemiology, Manifestations, Treatment Cancer in Children	Chapters 9, 10, and 11
WK 4	QUIZ Neurological System	Chapters 12, 13, 14, 15, & 16
	Pulmonary System	Chapters 25, 26, and 27
	Cardiovascular and Lymphatic Systems	Chapters 22, 23, and 24
WK 5	UNIT EXAM Digestive System	Chapters 33, 34, and 35
	Endocrine and Hematologic Systems	Chapters 17, 18, 19, 20, & 21
WK 6	QUIZ Musculoskeletal System	Chapters 36, 37, and 38
	Integumentary System	Chapters 39 and 40
WK 7	UNIT EXAM Renal and Urologic System	Chapters 28, 29, and 30
	Reproductive	Chapters 31 and 32
WK 8	Case Study Presentations FINAL WRITTEN EXAMINATION	

Bibliography

- Brashers, V. L. (2001). *Clinical, applications of pathophysiology: assessment, diagnostic reasoning, and management*. (2nd ed.). St. Louis, MO: Mosby.
- Burger, C. M. (2004). Emergency: Hypokalemia. *American Journal of Nursing*, 104(11), 61-65.
- Cruthchlow, E. M., Dudac, P. J., MacAvoy, S., & Madara, B. R. (2002). *Quick look nursing: pathophysiology*. Thorofare, NJ: Slack Incorporated.
- Goldrick, B. A. (2004). Emerging infections: respiratory syncytial virus. *American Journal of Nursing* 104(11), 54-56.
- McPhee, S. J., Lingappa, V. R., & Ganong, W. F. (2003). *Pathophysiology of disease: an introduction to clinical medicine*. (4th ed.). New York: Lange Medical Books/McGraw-Hill.
- Pathophysiology: A 2-in-1 reference for nurses*. (2005). Philadelphia, PA: Lippincott Williams & Wilkins.
- Pathophysiology made incredibly easy!* (2nd ed.). (2002). Philadelphia, PA: Lippincott Williams & Wilkins.