NR281 PATHOPHYSIOLOGY I

Learning Plan

PURPOSE

This learning plan expands upon the key concepts identified for the course and guide faculty teaching the pre-licensure BSN curriculum in all locations. Readings and assignments contained within the newly aligned course shells support learner's mastery of this content and the course outcomes.

NCLEX TEST PLAN	
Integrated Processes: Nursing Process, Caring, Communication & Documentation, Teaching/Learning, and Culture & Spirituality	
1	Safe and Effective Care Environment - (Management of Care, Safety and Infection Control)
2	Health Promotion and Maintenance
3	Psychosocial Integrity
4	Physiological Integrity - (Basic Care and Comfort, Physiological Adaptation)

CONTENT OUTLINE

Unit 1	Alterations in Cell and Tissue Development	Chamberlain Care
Upon completion of this unit, the student will be able to 1. **Differentiate between types of cellular adaptation and the conditions under which each occurs. (CO 1/NCLEX-4)** 2. **Describe the impact of cellular injury on tissue**	1. **Health and Disease** (Health Promotion and Maintenance) a. Disease Prevention/Health Promotion 2. **Disease Process** (Safe and Effective Care Environment - Management of Care) (Physiological Integrity - Physiological Adaptation) a. Diagnosis and Etiology b. Pathogenesis c. Clinical Manifestations d. Disease Progression	Chamberlain Care provides a framework for student learning by addressing the following concepts in this unit: **Holistic Health**

organs and systems. (CO 2/NCLEX-1,4) **3. Discuss the developmental considerations of aging that impact cell injury and response. (CO 2, 3/NCLEX-2,4)**	**3. Cellular Adaption** (Physiological Integrity - Physiological Adaptation) a. Atrophy b. Dysplasia c. Hyperplasia d. Hypertrophy e. Metaplasia f. Neoplasia **4. Cellular Injury and Death** (Physiological Integrity - Physiological Adaptation) a. Cellular Injury Causes b. Apoptosis (programmed) c. Stages of cellular damage d. Necrosis (causes and types of necrosis) **5. Fluid, Electrolyte, and Acid-Base Imbalance** (Physiological Integrity - Physiological Adaptation) a. Basic Concepts/Processes i. Fluid Compartments ii. Movement of Water b. Fluid Excess c. Fluid Deficit d. Sodium Imbalance e. Potassium Imbalance f. Calcium Imbalance g. Other important electrolyte imbalances **6. Acid-Base Imbalance** (Physiological Integrity - Physiological Adaptation) a. Basic concepts/processes b. Serum pH control c. Metabolic/Respiratory d. Compensation/Decompensation e. Acidosis f. Alkalosis	Recognize the health to illness continuum which includes health promotion and disease prevention.
Unit 2	**Genetic and Genomic Basis of Disease**	**Chamberlain Care**

Upon completion of this unit, the student will be able to do the following. 1. **Characterize Chromosomal aberrations. (CO 1, 2/NCLEX4)** 2. **Discuss the transmission of genetic disease and pathophysiological consequences. (CO 1, 2/NCLEX-1,4)** 3. **List examples of genetic diseases. (CO 1/NCLEX-4)** 4. **Differentiate genomics from genetics. (CO 2/NCLEX-4)** *5.* **Explain the impact of environmental, sociocultural and ACE factors on an individual's genetic composition. (CO 3/NCLEX-1, 4)**	1. **Congenital and Genetic Disorders** (Physiological Integrity - Reduction of Risk Potential, Physiological Adaptation) (Safe and Effective Care Environment - Management of Care) a. Genetic control b. Congenital Anomalies c. Gene Disorders and Inheritance i. Single-Gene Disorders ii. Chromosomal Disorders iii. Multifactorial Disorders iv. Developmental Disorders v. Inherited disorders by organ system d. Diagnostic Tools (Screening/Testing methods) e. Genetic Technology i. Research ii. Gene Therapy	Chamberlain Care provides a framework for student learning by addressing: **Cultural Humility:** Appreciate impact of genetics and genomics in transmission of disease **Extraordinary Nursing** Review the concepts from Units 1 & 2, visit the Center for Academic Success and apply care for self in preparation for Exam 1.
Unit 3	**Alterations in Defense Mechanisms**	**Chamberlain Care**
Upon completion of this unit, the student will be able to: 1. **Relate alterations in structure and function of defense mechanisms to level of wellness. (CO 1,**	1. **Pathophysiology of Inflammation** (Physiological Integrity - Physiological Adaptation) a. Steps of Inflammation b. Acute Inflammation i. Local effects ii. Systemic effects	Chamberlain Care provides a framework for student learning by addressing: **Holistic Health (and Care of Self)** Describe the impact of stress on the immune function of an individual (and a nursing

3/NCLEX-4) **2. Trace the impact of alterations in defense mechanisms on homeostasis. (CO 2/NCLEX-1,4)** **3. Summarize the impact of altered defenses on the individual. (CO 3/NCLEX-4)** **4. Develop a strategy to minimize the impact of stress on immune function. (CO 1, 3/NCLEX-2, 4)**	iii. Complications c. Chronic Inflammation i. Complications **2. Healing Process** (Physiological Integrity - Physiological Adaptation) a. Cellular processes b. Factors affecting healing i. Environment ii. Nutrition c. Complications of healing d. Examples of healing i. Burns ii. Lacerations iii. Pressure ulcers **3. Infection** (Physiological Integrity - Physiological Adaptation) (Safe and Effective Care Environment - Safety and Infection Control) a. Microorganism types b. Infection i. Transmission ii. Resistance iii. Pathogenicity iv. Development and patterns v. Clinical manifestation vi. Treatments **4. Immunity and Immune Response** (Physiological Integrity - Physiological Adaptation) (Safe and Effective Care Environment - Safety and Infection Control) a. Antibodies and Antigens b. The Complement System c. Chemical Mediators d. Acquired immunity e. Hypersensitivity Reactions (types and differences) f. Autoimmunity g. Immunodeficiency	student) and develop a person plan to manage stress
Unit 4	**Cancer**	**Chamberlain Care**

Upon completion of this unit, the student will be able to: 1. **Differentiate characteristics of benign and malignant tumors. (CO 1/NCLEX-4)** 2. **Associate risk factors with specific cancer development. (CO 2, 3/NCLEX-4)** 3. **Describe possible etiologies of malignancies and mechanisms of cancer cell spread. (CO 1, 3/NCLEX-4)** 4. **List diagnostic tests, general clinical manifestations and complications of cancer. (CO 1/NCLEX-4)** 5. **Compare treatment modalities used for cancer and complications associated with each. (CO 1,3/NCLEX-4)**	1. **Cancer** (Health Promotion and Maintenance) (Physiological Integrity - Physiological Adaptation) a. Tumors: Classification and Staging b. Metastasis c. Carcinogenesis d. Manifestations and Complications of Cancer e. Cancer Treatments	Chamberlain Care provides a framework for student learning by addressing the following: **Holistic Health** Describe the interactions between genetics and environment in the development and progression of cancer and its impact on homeostasis. **Extraordinary Nursing** Review the concepts from Units 3 & 4, visit the Center for Academic Success and apply care for self in preparation for Exam 2.
Unit 5	**Alterations in Integumentary and Hematologic Systems**	**Chamberlain Care**
Upon completion of this unit, the student will be able to:	1. **Pathophysiology of Skin (Integumentary System)** (Physiological Integrity - Physiological Adaptation) a. Skin Function	

1. Explain etiology and types of integumentary lesions. (CO 1/NCLEX-4) 2. **Differentiate among common clinical manifestation and complications of integumentary infections. (CO 1/NCLEX-4)** **3. Relate diagnostic tests and expected results associated with disorders of the integumentary system. (CO 1/NCLEX-4)** **4. List examples of preventative measures. (CO 3/NCLEX-2,4)** **5. Predict the effects of aging on the integumentary system. (CO 2, 3/NCLEX-4)** **6. Articulate pathophysiologic alterations of red and white blood cell production, differentiation, structure and function. (CO 1, 2/ NCLEX-4)** **7. Trace the impact that alterations in the hematologic system**	b. Skin Lesions i. Malignant ii. Benign c. Skin Disorders i. Inflammatory Disorders ii. Dermatitis iii. Psoriasis iv. Infectious Disorders v. Viral vi. Fungal vii. Bacterial d. Skin Tumors i. Melanoma ii. Basal cell iii. Squamous Cell **2. Pathophysiology of Circulation and Blood** (Physiological Integrity - Physiological Adaptation) a. Composition b. Creation c. Clotting i. DIC ii. Thrombophilia iii. Hemophilia d. Anemia i. Iron Deficit ii. Pernicious Anemia iii. Sickle-Cell Anemia iv. Aplastic Anemia e. Neoplastic Blood Disorders i. Polycythemia ii. Leukemia	

have on the body. (CO 2/ NCLEX-4) 8. **Summarize the impact of alterations in the hematologic system on homeostasis. (CO 3/ NCLEX-4)**		
Unit 6	**Alterations in the Pulmonary System**	**Chamberlain Care**
Upon completion of this unit, the student will be able to: **1. Articulate alterations in structure and function of the respiratory system. (CO 1/ NCLEX-4)** **2. Trace the impact that alterations in the respiratory system have on ventilation and oxygenation. (CO 2/ NCLEX-2, 4)** 3. **Summarize the impact of alterations in the respiratory system on homeostasis. (CO 3/ NCLEX-4)**	**1. Pathophysiology of Respiratory System** (Physiological Integrity - Physiological Adaptation) a. Review Respiratory function i. Respiration ii. Ventilation iii. Perfusion and Gas Exchange b. Infectious Disorders i. Upper Respiratory Infections ii. Lower Respiratory Infections c. Obstructive Lung Diseases i. Inflammatory 1. Asthma ii. Neoplastic 1. Lung cancer iii. Genetic 1. Cystic Fibrosis iv. Functional 1. Emphysema 2. Sleep apnea d. Restrictive Lung Diseases i. Pneumothorax ii. Pulmonary Fibrosis e. Vascular Disorders i. Pulmonary Emboli ii. Pulmonary Edema f. Expansion Disorders i. Atelectasis	Chamberlain Care provides a framework for student learning by addressing: **Extraordinary Nursing** Review the concepts from Units 1 & 2, visit the Center for Academic Success and apply care for self in preparation for Exam 1.
Unit 7	**Alterations in Cardiovascular System**	**Chamberlain Care**

Upon completion of this unit, the student will be able to do the following. 1. **Articulate alterations in structure and function of the cardiovascular system. (CO 1/NCLEX-4)** 2. **Trace the impact that alterations in the cardiovascular system have on perfusion. (CO 2/NCLEX-2, 4)** 3. **Summarize the impact of alterations in the cardiovascular system on homeostasis. (CO 3/ NCLEX-4)**	1. **Pathophysiology of Cardiovascular System** (Physiological Integrity - Physiological Adaptation) a. Anatomy and Conduction b. Control and Circulation c. Hemodynamics d. Cardiovascular Disorders i. Arteriosclerosis/Athrosclerosis 1. Angina 2. Myocardial Infarction 3. Arrhythmias 4. Heart Failure 5. Congenital Defects ii. Infectious Disorders 1. Endocarditis 2. Pericarditis 3. Rheumatic Heart Disease iii. Arterial Disorders 1. Hypertension 2. Aneurysms iv. Venous Disorders 1. Varicose Veins 2. Thrombophlebitis v. Shock 1. Types of shock	:
Unit 8	Wrap it Up!	Chamberlain Care
Upon completion of this unit, the student will be able to: 1. **Summarize environmental, genetic, gender, lifestyle and other impacts on the**	1. **Review content** (Safe and Effective Care Environment – Management of care) (Health Promotion and Maintenance) (Psychosocial Integrity) (Physiological Integrity - Physiological Adaptation) a. Prepare for final exam 2. **Focus on application and recall** (Safe and Effective Care Environment – Management of care) (Health Promotion and	Chamberlain Care provides a framework for student learning by addressing: **Extraordinary Nursing** Review the concepts from the course, visit the Center for Academic Success and apply care for self in preparation for the final exam.

development of disease. (CO 2/NCLEX-2,3,4) **2. Explain how pathophysiological processes are interrelated. (COs 1, 2/NCLEX-4)** **3. Predict signs and symptoms based on pathophysiological processes. (COs 1, 2/NCLEX-4)** **4. Review genetics and physiologic changes of aging and their impact on the development of disease. (COs 2, 3/NCLEX-2, 4)** **5. Successfully complete the cumulative Final Exam. (COs 1, 2, 3/NCLEX-1, 2, 3, 4)**	Maintenance) (Psychosocial Integrity) (Physiological Integrity - Physiological Adaptation) a. Practice testing b. Further discussion c. Case studies **3. Review interrelationships of pathophysiologic processes** (Physiological Integrity - Physiological Adaptation) a. Hypoxia b. Pain c. Fluid and Electrolyte d. Acid-Base Balance e. Effects on aging **4. Student Questions**	