

Nursing Course/Unit **Biology 111**

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Objectives	Content Outline	Methodology
Introduction/overview of anatomy	<ul style="list-style-type: none"> <input type="checkbox"/> Differentiate between anatomy and physiology <input type="checkbox"/> Describe the levels of organization in the human body <input type="checkbox"/> List the functions necessary for maintaining life <input type="checkbox"/> Describe homeostasis and explain the difference between positive and negative feedback 	<ul style="list-style-type: none"> <input type="checkbox"/> Powerpoint covering key points <input type="checkbox"/> Quiz covering slides <input type="checkbox"/> Modeling of levels of organization <input type="checkbox"/> Workbook assessment <input type="checkbox"/> Chapter test <input type="checkbox"/> Quia activities created by Kristy A. Brandabur
Organization of the Human body	<ul style="list-style-type: none"> <input type="checkbox"/> Define anatomical position <input type="checkbox"/> Use correct terminology in naming body parts <input type="checkbox"/> Use directional terms for describing locations on the human body <input type="checkbox"/> Identify the major dissectional planes <input type="checkbox"/> Identify the body cavities and the major organs in each 	<ul style="list-style-type: none"> <input type="checkbox"/> Powerpoint covering key points <input type="checkbox"/> Quiz covering slides <input type="checkbox"/> Modeling of levels of organization <input type="checkbox"/> Workbook assessment <input type="checkbox"/> Chapter test <input type="checkbox"/> Quia activities created by Kristy A. Brandabur
Chemistry, Matter and Life	<ul style="list-style-type: none"> <input type="checkbox"/> Describe the 4 major types of energy and explain how energy is converted <input type="checkbox"/> Relate atoms, elements, compounds and matter <input type="checkbox"/> Identify the elements necessary for life <input type="checkbox"/> Differentiate between ionic, covalent and hydrogen bonds Describe the properties of water that make it essential for human survival <input type="checkbox"/> Show understanding of the pH scale as it applies to humans (body fluids) <input type="checkbox"/> Distinguish between each of the 4 classes of organic molecules in terms of structure and function (relate to nutrition) 	<ul style="list-style-type: none"> <input type="checkbox"/> Powerpoint covering key points <input type="checkbox"/> Quiz covering slides <input type="checkbox"/> Workbook assessment <input type="checkbox"/> Chapter test <input type="checkbox"/> Quia activities created by Kristy A. Brandabur

Objectives	Content Outline	Methodology
Cells and Their Functions	<ul style="list-style-type: none"> <input type="checkbox"/> Structure of plasma membrane as it relates to transport <input type="checkbox"/> Relationship between Endoplasmic reticulum, Golgi, and secretion of cellular products <input type="checkbox"/> Differentiate between types of membrane transport <input type="checkbox"/> Describe how each different type of membrane transport is essential to maintenance of cellular and organism homeostasis <input type="checkbox"/> Describe (in general) cellular respiration (relate back to organic molecules) <input type="checkbox"/> Explain the process of cellular reproduction and how that relates to human reproduction, growth and development <input type="checkbox"/> Understand relationship between DNA, RNA, proteins and traits Describe the different cell types in the human body 	<ul style="list-style-type: none"> <input type="checkbox"/> Powerpoint covering key points <input type="checkbox"/> Quiz covering slides <input type="checkbox"/> Workbook assessment <input type="checkbox"/> Chapter test <input type="checkbox"/> Quia activities created by Kristy A. Brandabur <input type="checkbox"/> M&M model and demonstration
Tissues, Glands and Membranes	<ul style="list-style-type: none"> <input type="checkbox"/> Explain the functional and structural differences between epithelial, connective, muscle and nervous tissue <input type="checkbox"/> Describe the major types of epithelial tissue <input type="checkbox"/> Describe the major types of connective tissue <input type="checkbox"/> Describe the 3 types of muscle tissue <input type="checkbox"/> Describe nervous tissue <input type="checkbox"/> Explain how tissues develop and repair 	<ul style="list-style-type: none"> <input type="checkbox"/> Powerpoint covering key points <input type="checkbox"/> Quiz covering slides <input type="checkbox"/> Workbook assessment <input type="checkbox"/> Chapter test <input type="checkbox"/> Quia activities created by Kristy A. Brandabur
Skin in Health and Disease	<ul style="list-style-type: none"> <input type="checkbox"/> Describe the reasons skin is an essential organ especially in terms of protection of underlying tissues 	<ul style="list-style-type: none"> <input type="checkbox"/> Powerpoint covering key points <input type="checkbox"/> Quiz covering slides <input type="checkbox"/> Workbook assessment <input type="checkbox"/> Chapter test

The Skeleton: Bones and Joints

- Name and describe the function of each of the 4 major classes of membranes
- Identify the structures of the skin and explain how the structures function in protection
- Describe the role of skin in maintenance of homeostasis

- Explain the correlation between the skeletal and muscular systems and the role each plays in support and movement
- Describe the functional anatomy of compact and spongy bone
- Describe key movements of the human body by using the correct name of the bone being moved
- Describe the structure of a joint and explain how bones and muscles interact at joints to provide movement
- Describe the 3 main types of joints
- Demonstrate the movements that occur at each of the synovial joints

- Quia activities created by Kristy A. Brandabur

- Powerpoint covering key points
- Quiz covering slides
- Workbook assessment
- Chapter test
- Quia activities created by Kristy A. Brandabur
- Real human bones used in demonstrations of structural anatomy of skeletal system

The Muscular System

- Explain the correlation between the skeletal and muscular systems and the role each plays in support and movement
- Explain the structural and functional difference between smooth muscle, cardiac muscle and skeletal muscle
- Describe the functional anatomy of muscle tissue (macroscopic and microscopic)

- Powerpoint covering key points
- Kinesiology Lab
- Quiz covering slides
- Workbook assessment
- Chapter test
- Quia activities created by Kristy A. Brandabur

The Nervous System: Spinal Cord and Spinal Nerves

- Describe key movements of the human body by using the correct name for the muscle causing the movement
- Identify the components of the nervous system
- Explain the physiology of nervous impulses
- Describe the branches of the human nervous system. Central and Peripheral.
- Describe the Autonomic, Somatic, Sympathetic and Parasympathetic systems.

- Color cards to introduce brain signals
- Youtube to describe and demonstrate reflexes

The Nervous System: Brain and Cranial Nerves

- Explain brain structure and determine the role each of the major areas of the brain plays in homeostasis (perception and regulation)
- Explain the cranial nerves
- Describe how external and internal stimuli are perceived

- Story of Cerebellum created by Kristy A. Brandabur
- Powerpoint covering key points
- Quiz covering slides
- Workbook assessment
- Chapter test
- Quia activities created by Kristy A. Brandabur

The Sensory System

- Identify the structure and function of each of the 5 major senses (vision, hearing, olfaction, taste, touch)

- Powerpoint covering key points
- Quiz covering slides
- Workbook assessment
- Chapter test
- Quia activities created by Kristy A. Brandabur

The Endocrine System: Glands and Hormones

- Describe how nervous system and endocrine system function together to coordinate body functions
- Explain hormone action

- Powerpoint covering key points
- Quiz covering slides
- Workbook assessment
- Chapter test
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<p>The Blood</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Identify the major endocrine organs, hormones released, action and result of hormone imbalance 	<ul style="list-style-type: none"> <input type="checkbox"/> Powerpoint covering key points <input type="checkbox"/> Quiz covering slides <input type="checkbox"/> Workbook assessment <input type="checkbox"/> Chapter test <input type="checkbox"/> Quia activities created by Kristy A. Brandabur
<p>The Heart and Heart Disease/ Blood Vessels and Circulation</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Explain the components of blood <input type="checkbox"/> Explain the functions of blood types and cells <input type="checkbox"/> Explain blood clot formation <input type="checkbox"/> Describe diseases of the blood <input type="checkbox"/> Explain how blood type is determined and discuss the results of an incorrect transfusion 	<ul style="list-style-type: none"> <input type="checkbox"/> Diagram blood flow through heart and circulatory system
<p>The Lymphatic System and Immunity</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Describe and illustrate blood flow through the heart and circulatory system <input type="checkbox"/> Describe the cardiac cycle <input type="checkbox"/> Describe the anatomy of the heart and vessels <input type="checkbox"/> Explain the electrical conduction system of the heart <input type="checkbox"/> Explain blood pressure and heart disease <input type="checkbox"/> Explain pulse 	<ul style="list-style-type: none"> <input type="checkbox"/> Powerpoint covering key points <input type="checkbox"/> Quiz covering slides <input type="checkbox"/> Workbook assessment <input type="checkbox"/> Chapter test <input type="checkbox"/> Quia activities created by Kristy A. Brandabur
<p>The Respiratory System</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Describe the cellular components of the lymphatic and immune systems <input type="checkbox"/> Describe the lymphatic system in relation to the cardiovascular system <input type="checkbox"/> Explain how immune system components are transported throughout the human body <input type="checkbox"/> Compare and contrast the nonspecific and specific immune responses <input type="checkbox"/> Explain how disease can be prevented 	<ul style="list-style-type: none"> <input type="checkbox"/> Powerpoint covering key points <input type="checkbox"/> Quiz covering slides <input type="checkbox"/> Workbook assessment <input type="checkbox"/> Chapter test

<p>The Digestive System</p>	<ul style="list-style-type: none"> □ Describe the key structures of the respiratory system □ Correlate the functions of the cardiovascular and respiratory systems □ Explain the 3 phases of respiration □ List ways in which oxygen and carbon dioxide are transported in the blood □ Explain the mechanism for pulmonary ventilation □ Altered breathing patterns and disease 	<ul style="list-style-type: none"> □ Quia activities created by Kristy A. Brandabur
<p>The Urinary System</p>	<ul style="list-style-type: none"> □ Identify the role each of the digestive organs plays in delivering nutrients to cells □ Differentiate between chemical and physical(mechanical) digestion □ Differentiate between digestive tract and accessory organs □ Identify the major digestive enzymes and the role each plays in digestions □ Describe disorders associated with the digestive system 	<ul style="list-style-type: none"> □ Powerpoint covering key points □ Quiz covering slides □ Workbook assessment □ Chapter test □ Quia activities created by Kristy A. Brandabur
<p>The Male and Female Reproductive Systems</p>	<ul style="list-style-type: none"> □ Functional anatomy of the kidney □ Microscopic function of the nephron □ Urine formation □ Significance of kidney for maintenance of homeostasis 	<ul style="list-style-type: none"> □ Powerpoint covering key points □ Quiz covering slides □ Workbook assessment □ Chapter test □ Quia activities created by Kristy A. Brandabur

Human Development/Embryology

- Describe function of reproductive organs and their regulation by specific hormones
- Identify the reproductive organs of both the male and female
- Describe menses, menstruation, and menopause
- Using the menstrual cycle as a form of birth control
- Reproductive disorders

- Explain the stages of human development from conception to adulthood
- Discuss various congenital and gestational disorders