The BIO 101 Exit Exam is meant ONLY for Allied-health and Pre-nursing students attending Baltimore City Community College. Students will have two attempts to take the BIO 101 Exit Exam and must pass with a 70% or better in order to be exempt from taking either BIO 101 or BIO 102 as pre-requisites for other biology requirements.


Topics include:
- Animal Development
- Animal Reproduction
- Biotechnology
- Body Orientation and Tissues
- Cell Cycle and Mitosis
- Cell Structure
- Cellular Respiration
- Characteristics of Life
- Chemistry
- Circulatory System
- Digestive System
- DNA Replication
- Endocrine System
- Excretory System
- General
- Genetics
- Genomics
- Homeostasis
- Inheritance
- Levels of Biological Organization
- Meiosis
- Metabolism
- Molecular Biology
- Nervous System
- Respiratory System

Learning outcomes:
- Describe the characteristics that all living organisms share.
- Compare and contrast the three branches of life.
- List and describe five elements of the scientific method.
- List and give an example of five characteristics typical of living things.
- Describe the principles of biology.
- Relate how the arrangement of electrons determines an elements reactivity.
- Contrast ionic and covalent bonds.
- Identify the reactants and products in a chemical equation.
- Distinguish between an acid and a base.
- Interpret the pH scale.
- Distinguish between organic and inorganic molecules
- Summarize the categories of carbohydrates and provide examples of their diverse biological functions.
- Summarize the categories of lipids and provide examples of their diverse biological functions.
- Summarize the variety of protein types and provide examples of their diverse biological functions.
- Explain why microscopes are needed to see most cells.
- Summarize the relationship between the surface-area-to-volume ratio of a cell and its size.
- Identify the characteristics common to all cells.
- Distinguish between prokaryotic and eukaryotic cells.
- State the components of the endomembrane system and list their functions.
- Identify the energy roles that chloroplasts and mitochondria play in a cell.
- Relate the specific components of the cytoskeleton to their diverse roles within the cell.
Summarize how the laws of thermodynamics and the concept of entropy relate to living organisms.
Describe the phases of the ATP cycle.
Describe the flow of energy between photosynthesis and cellular respiration.
Identify the role that enzymes play in metabolic pathways.
Explain the induced fit model of enzymatic action.
Categorize the various ways in which materials can move across plasma membranes.
Explain osmosis and the effect it has on cells in various tonicity environments.
Define the various forms of bulk transport that can move materials into or out of a cell.
State the overall chemical equation for photosynthesis.
Recognize what is meant by the terms reduction and oxidation.
Define cellular respiration.
Identify the four phases of cellular respiration and identify the location of each within the cell.
Explain why fermentation pathways are beneficial when oxygen is not available.
Give examples of products made by fermenting yeast and bacteria.
Calculate the amount of ATP produced by each glucose molecule entering cellular respiration.
Summarize the purpose of cellular reproduction.
Summarize the activities that occur in the cell during interphase, mitosis, and cytokinesis.
Summarize the events in each phase of mitosis.
Describe the process of apoptosis.
Describe the characteristics of cancer cells.
Describe the factors that reduce the risk of cancer.
Explain the purpose of meiosis.
Define the terms diploid, haploid, sister chromatid, and homologous chromosomes.
Define nondisjunction and briefly explain how nondisjunction may bring about an abnormal chromosome number.
Distinguish between genotype and phenotype.
Interpret a pedigree to determine if the pattern of inheritance is autosomal dominant or recessive.
Solve and interpret genetic crosses that exhibit incomplete dominance and codominance.
Describe the structure of a DNA molecule.
Compare and contrast the structure of RNA with that of DNA.
Explain what the genetic code is used for and explain why it is considered to be almost universal.
Differentiate between embryonic and adult stem cells.
Define the term transgenic.
Describe the primary characteristics of connective tissue.
Describe the function of nervous tissue.
Classify each organ system according to its involvement in transport, body maintenance, control, sensory input and motor output, or reproduction.
List the general functions of each organ system.
Explain the importance of homeostasis.
Explain the role of the lymphatic system in circulation within the human body.
List the functions of blood.
Detail the types of blood cells and their functions.
List the components of the upper and lower respiratory tracts.
Explain how the urinary system participates in maintaining homeostasis.
Identify the organs of the human digestive system and provide a function for each.
List the accessory organs of the digestive system and explain their functions.
Detail the digestion and absorption of specific nutrients (e.g., carbohydrates) in the digestive tract.
Describe the structure and function of a neuron.
Give examples of drugs of abuse and explain how they affect the nervous system.
Describe the structure and function of the central and peripheral nervous systems.
Identify the major endocrine glands of the body and summarize their role in the body.
Describe the structures of the male and female reproductive systems and their functions.
Explain how hormones regulate the male and female reproductive systems.
Evaluate the effectiveness of various means of birth control and explain how they work.
Describe the causative agents of common sexually transmitted diseases.
Describe the processes of fertilization, embryonic development, fetal development, and birth.
Describe the structure and function of the placenta.