South Central College

BIOL 162 Human Biology

Course Outcome Summary

Course Information

Description This one-semester course is an introduction to the biology of the human body. Basic form and function of the body systems and their interactions will be emphasized. Other topics include: terminology, basic chemistry, cell biology, genetics, molecular biology and nutrition as it relates to the human body. (Minnesota Transfer Curriculum goal area 3) (Prerequisites: A Reading Comprehension Score of 78 or above or READ 0090.)

Total Credits 4

Total Hours 80

Types of Instruction

Instruction Type	Credits/Hours
Lecture	3/48
Lab	1/32

Pre/Corequisites

Reading Comprehension Score of 78 or above or READ 0090.

Institutional Core Competencies

Communication - Students will be able to demonstrate appropriate and effective interactions with others to achieve their personal, academic, and professional objectives.

Critical and Creative Thinking - Students will be able to demonstrate purposeful thinking with the goal of using a creative process for developing and building upon ideas and/or the goal of using a critical process for the analyzing and evaluating of ideas.

Course Competencies

1. Explain the

2. Describe the basic chemistry of living things.

Learning Objectives

Describe the components of an atom and how they interact.
Describe the role of water in life and its properties that make it a good solvent.
Describe chemical bonds including covalent, ionic and hydrogen.
Describe acids, bases, buffers and enzymes and their role in maintaining homeostasis.
Describe the major categories of biological molecules: carbohydrates, lipids, proteins and nucleic acids and understand their importance in the human body.

3. Describe cellular structures, functions and

8. Describe the function of the cardiovascular system and explain its interrelationship with the lymphatic system.

Learning Objectives

Describe the functions and components of blood including ABO blood types, Rhesus (Rh) factor, blood donation and blood clotting.
Compare and contrast the structure and function of veins, arteries and capillaries.
Explain how materials are exchanged between tissues and blood in a capillary bed.
Describe the structures and functions of the heart and blood flow through the heart.
Illustrate the cardiac and conduction system of the heart.
Describe how the blood and lymphatic vessels work together.
Analyze health applications that may include: cardiovascular disease and cigarette smoking, high blood pressure, coronary artery disease, peripheral artery disease, atherosclerosis, benefits of exercise, heart attack, replacement valves, varicose veins, aneurysms.

9. Describe the respiratory system and the exchange of gases.

Learning Objectives

Describe the major structures and functions of the respiratory system.
Explain gas exchange in the lungs.
Analyze health applications that may include: common cold, influenza, pneumonia, strep throat, tuberculosis, bronchitis, emphysema, lung cancer, effects of smoking, asthma, lung disease.

10. Describe the immune system and identify its role in defending the body.

Learning Objectives

Compare and contrast various infectious agents and their transmission.
Describe the body's response to infections.
Analyze health applications that may include: rejection of organ transplants, autoimmune disorders, monoclonal antibodies, allergies, prion disease, hepatitis, rabies, West Nile virus.

11. Describe the digestive system and the role of nutrition and metabolism.

Learning Objectives

Describe the basic structures and functions of the digestive system and the accessory organs.
Describe the secretions produced by the stomach and explain how they aid in digestion.
Explain the role of nutrients in your diet: fats, carbohydrates, proteins and amino acids.
Describe the sources and functions of various vitamins and minerals used to maintain a healthy body.
Analyze food labels for nutritional value.
Analyze the effect of obesity, weight loss programs and eating disorders.
Analyze health applications that may include: acid reflex, heartburn, ulcers, gallstones and gallbladder removal, diverticulitis, colorectal cancer, gastric bypass surgery, liver cirrhosis.

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Analyze

process.
Briefly describe the aging process.
Analyze health applications that may include: endocrine disruptors and reproductive problems, invitro fertilization, breast cancer, erectile dysfunction, benign prostactic hyperplasia , prostate cancer, endometriosis, ectopic pregnancy, infertility, birth defects, hormone replacement therapy for menopause, Alzheimer's.

14. Describe deoxyribonucleic acid (DN t ^ hE

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