Administrative Unit: Science
Course Prefix and Number: BIOL 326
Course Title: Physiology
Number of Credit Hours: 3
Lecture Hours: 3
Laboratory Hours: 0
Catalog Description: Functional processes of the human organism with emphasis on regulatory mechanisms. Concurrent enrollment in BIOL 326L is required. Prerequisites: BIOL 110 and CHEM 110. Offered Spring.
Prerequisite(s)/Corequisite(s): BIOL 110 and CHEM 110. Corequisite: BIOL 326L.
Text(s): Textbook(s) listed is/are not necessarily the textbook(s) used in the course.
Fox, S.I. Human Physiology, McGraw-Hill
Tortora, G.J. and R.L. Evans, Principles of Human Physiology, Harper & Row

Course Objectives:• To understand the functional processes of the various organs and organs systems of the human body.
• To understand the interrelationships that exist between the different structures and functions of the body.
• To define homeostasis and describe the physiological mechanisms that maintain homeostasis.
• To apply knowledge of organ system function and regulatory mechanisms to situations involving malfunction.

Measurable Learning Outcomes• Relate the role and importance of homeostasis in physiology.
• Outline the chemical composition of the body.
• Explain the electrical/chemical activity of neurons and neurotransmitters.
• Describe the functioning of the autonomic nervous system.
• Itemize functional aspects of the senses.
• Explain the functions of hormones.
• Describe the mechanism of muscle contractions.
• Detail the cardiac cycle and electrical activity of the heart.
• Describe how and why cardiac output, blood flow and blood pressure vary.
• Summarize the mechanisms used by the immune system.
• Describe gas exchange in the lungs and body.
• Describe the effects of environmental changes on respiratory function.
• Outline renal control of electrolytes and acid-base balance.
• Describe neural and endocrine regulation of the digestive system.
• Compare the ways energy metabolism is regulated.
• Describe how reproduction is regulated by the endocrine system.

Topical Outline (major areas of coverage):

• Cellular environment
• Membrane physiology
• Muscle contraction
• Nervous system function
• Endocrine control of physiological processes
• Cardiovascular physiology
• Respiratory physiology
• Digestive physiology
• Renal physiology
• Reproductive physiology

Recommended maximum class size for this course: 35

Library Resources: Online databases are available at http://www.ccis.edu/offices/library/resources.asp. You may access them from off-campus using your eServices login and password when prompted.

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NOTE: The intention of the master syllabus is to provide an outline of the contents of this course, as specified by the faculty of Columbia College, regardless of who teaches the course, when it is taught or where it is taught. Faculty members teaching this course for Columbia College are expected to facilitate learning pursuant to the course objectives and cover the subjects listed in the topical outline. However, instructors are also encouraged to cover additional topics of interest so long as those topics are relevant to the course’s subject. The master syllabus is, therefore, prescriptive in nature but also allows for a diversity of individual approaches to course material.