MASTER COURSE OUTLINE

A. BIOL 2021 Anatomy and Physiology I

B. COURSE DESCRIPTION:

This course is the first semester of a two-semester course in human anatomy and physiology. Basic concepts in biology are covered in the first part of the course including the scientific method, biological chemistry, cell structure and function, metabolism, cell division, genetics, and DNA structure and function. The second part of the course includes histology and the integumentary system, as well as the skeletal, muscular and nervous systems. Prerequisite: CHEM 1121 or 1202.
MnTC (Goal 3/NS and Goal 2/CT); (4 Cr – 3 lect, 1 lab)

C. *MnTC Discipline: Natural Sciences **Core Theme: Critical Thinking

D. MAJOR CONTENT AREAS:

- Major themes of anatomy and physiology
- Science and the scientific method
- Matter and energy
- The molecules of life
- Cellular form and function
- Genetics and cellular function
- Histology
- Integumentary system
- Bone tissue, skeletal system, and joints
- Muscular system
- Muscular tissue
- Nervous system

E. GOAL TYPE, OBJECTIVES, AND OUTCOMES:

GOAL TYPE	**OBJECTIVES** **Students will be able to**	**OUTCOMES** **The student will successfully**
MnTC Goal 2a	gather factual information and apply it to a given problem in a manner that is relevant, clear, comprehensive and conscious of possible bias in the information selected.	1. complete an analysis of scientific findings relevant to human anatomy and physiology. 2. summarize and explain the context of the findings and the sources of possible bias in the analysis above.
MnTC Goal 2b	imagine and seek out a variety of possible goals, assumption, interpretations or	1. determine and justify the

	perspectives which can give alternative meanings or solutions to a given situation or problem.	hypothesis/hypotheses prior to experimentation. 2. present data to support or contradict hypothesis/hypotheses after concluding experimentation.
MnTC Goal 2c	analyze the logical connections among the facts, goals and implicit assumptions relevant to a problem or claim; generate and evaluate implications that follow from them.	1. predict and discuss expected results prior to experimentation. 2. explain how assumptions affect interpretation of the results.
MnTC Goal 3a	demonstrate understanding of scientific theories.	1. complete an analysis of an experiment related to human physiology that will include identifying the independent, dependent, and control variables as well as the steps of the scientific method. 2. define and explain the principles of experimentally- verifiable biological theories, including cell theory, the theory of evolution, and other theories relevant to anatomy and physiology. 3. define and explain the pertinent vocabulary terms related to outcomes 1 and 2 above.
MnTC Goal 3b	formulate and test hypotheses by performing laboratory simulations or field experiments in at least two of the natural science disciplines. One of these experimental components should develop, in greater depth, students' laboratory experience in the collection of data, its statistical and graphical analysis, and an appreciation of its sources of error and uncertainty.	1. choose and perform an in-depth analysis of the use of the scientific method in a rehearsed study of human physiology, including a statistical and graphical analysis. 2. explain the sources of possible bias, error, and uncertainty in the experimental analysis above.
MnTC Goal 3c	communicate their experimental findings, analyses and interpretations both orally and in writing.	1. document the use of the experimental method, types and uses of data collection, statistical and graphical analysis, and identifying sources of error and uncertainty in the study chosen in MnTC Goal 3b. 2. communicate the findings in oral and written formats.
CS	understand how cellular function relates to physiological function.	1. demonstrate an understanding of cellular function as it relates to human function.
CS	apply anatomical and physiological vocabulary appropriately.	1. define and explain the application of vocabulary terms related to anatomy and physiology.
CS	understand how normal physiological processes relate to homeostasis.	1. explain how homeostasis is maintained through normal physiological functioning.

F. SPECIAL INFORMATION:

This course may require use of the Internet, the submission of electronically prepared documents and the use of a course management software program. Students who have a disability and need accommodations should contact the instructor or the Student Success Center at the beginning of the semester. This information will be made available in alternative format, such as Braille, large print, or current media, upon request.

G. COURSE CODING INFORMATION: Course Code C/Class Maximum 48; Letter Grade

Revision date: 12/17/12; 1/24/18
AASC Approval date: 3/6/18

***Riverland Community College Disciplines**	**MnTC Goal Number**
Communication (CM)	**1**
Natural Sciences (NS)	**3**
Mathematics/Logical Reasoning (MA)	**4**
History and the Social & Behavioral Sciences (SS)	**5**
Humanities and Fine Arts (HU)	**6**

****Riverland Community College Core Themes**	**MnTC Goal Number**
Critical Thinking (CT)	**2**
Human Diversity (HD)	**7**
Global Perspective (GP)	**8**
Ethical and Civic Responsibility (EC)	**9**
People and the Environment (PE)	**10**

*These five MnTC Goals have been identified as Riverland Community College Disciplines.
** These five MnTC Goals have been identified as Riverland Community College Core Themes.
NOTE: The Minnesota Transfer Curriculum "10 Goal Areas of Emphasis" are reflected in the five required discipline areas and five core themes noted in the Riverland Community College program of study guide and/or college catalog.