MASTER COURSE OUTLINE

A. PHYS 1000 Introduction to Physics

B. COURSE DESCRIPTION:

This is an introductory course covering basic physics concepts and laws that govern everyday physical phenomena. This course is intended for students with no previous physics experience. Topics include mechanics, properties of matter, heat, waves, and electricity. Students will learn to apply basic physics principles through problem solving and laboratory experiments. Prerequisites: MATH 0660 (Intermediate Algebra I) or appropriate placement score.
MnTC (Goal 3/NS and 2/CT); (3 Cr – 2 lect, 1 lab)

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

D. MAJOR CONTENT AREAS

- Mechanics
  - Motion—linear, projectile, rotational
  - Newton's laws of motion
  - Momentum
  - Energy
  - Gravity
- Properties of Matter
  - Atomic structure
  - Elasticity
  - Density
  - Gas laws
  - Radioactivity
- Heat
  - Temperature
  - Heat
  - Specific heat
- Waves
  - Vibrations
  - Waves
- Electricity
  - Electrostatics
  - Electric current

E. GOAL TYPES, OBJECTIVES, AND OUTCOMES:

GOAL	OBJECTIVES Students will be able to	OUTCOMES The student will successfully
MnTC Goal 3a	demonstrate understanding of scientific theories.	1. demonstrate an understanding of physics theories. 2. demonstrate the application of the theories to everyday physical phenomena.
MnTC Goal 3c	communicate their experimental findings, analyses and interpretations both orally and in writing.	1. perform physics experiments. 2. record, analyze, and draw conclusions from the data generated in the experiments. 3. communicate the experimental findings.
MnTC Goal 3d	evaluate societal issues from a natural science perspective, ask questions about the evidence presented and make informed judgments about science-related topics and policies.	1. formulate questions and make judgments about physics-related issues.
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. record experimental data in laboratory experiments and draw conclusions based on interpretations of data. 2. identify sources of error in data-taking procedures.
MnTC Goal 2b	imagine and seek out a variety of possible goals, assumptions, interpretations and perspectives, which can give alternate meanings or solutions to given situations or problems.	1. demonstrate how alternate assumptions can lead to alternate solutions to the same problem.
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. solve physics problems that require logical connections between facts and assumptions pertaining to those problems and be able to pick the relevant formulas that are necessary in solving the problems. 2. draw conclusions based on the solutions to problems.
CS	use a variety of measuring devices and sensors to collect data relevant to physical situations so that logical conclusions may be drawn.	1. use data collected to test hypothesis and draw conclusions about validity, demonstrated in a written report. 2. use data collected to verify the accuracy of models or theories, demonstrated in a written report.

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: 10/12/10; 4/10/18
AASC Approval date: 05/08/18 ; 12/17/19

***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.