Bemidji State University

PHYS 2101: University Physics I

A. COURSE DESCRIPTION

Credits: 4  
Lecture Hours/Week: 0  
Lab Hours/Week: 0  
OJT Hours/Week: *.*  
Prerequisites: None  
Corequisites: None  
MnTC Goals: Goal 03 - Natural Science

First course of a calculus-based introductory physics sequence. Topics include Newton's laws of motion, gravitation, energy conservation, momentum, fluids, vibrations and waves. Includes lecture and laboratory. Prerequisite(s): MATH 2471 or consent of instructor. [Core Curriculum Goal Area 3 (LC)]

B. COURSE EFFECTIVE DATES: 08/01/2024 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Motion  
2. Kinematics  
3. Dynamics  
4. Energy  
5. Momentum  
6. Rotation  
7. Fluids  
8. Vibration  
9. Waves

D. LEARNING OUTCOMES (General)

1. describe, in words and mathematically, physics concepts related to force, energy, and momentum.  
2. use equations to make predictions and calculate measurable quantities for relevant physical situations.  
3. carry out experimental investigations and interpret data in a laboratory setting.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

Goal 03 - Natural Science

1. Demonstrate understanding of scientific theories.  
2. Formulate and test hypotheses by performing laboratory, simulation, 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.

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus
G. SPECIAL INFORMATION

None noted