Catalog Description: Three hours lecture, three hours lab per week. Prerequisites: Completion of MAC 1140 and MAC 1114, MAC 2147, or MTB 1321 and MAC 1105, with a grade of "C" or better. This course meets Area V requirements for the A.A./A.A.S./A.S. general education requirements. This course is a comprehensive non-calculus study of fundamental concepts of natural laws, especially as they apply to mechanics, heat, and sound. Additional special fees are required. Students already with credit for PHY 2048C cannot subsequently get credit for PHY 2053C.

Performance Standards:

At the successful completion of this course, the student should be able to:

1. Apply the algebra to calculate the position, velocity, and acceleration in one-dimensional motion with constant acceleration.
2. Apply Newton's Laws of Motion to single objects involving force and motion, including the use of vector components.
3. Apply the concepts of work and energy, impulse and momentum to mechanics problems.
4. Calculate the torque on an object in equilibrium and non-equilibrium situations with scalar method.
5. Demonstrate the ability to apply concepts such as specific heat and latent heat to calorimetry problems.
6. Apply the laws of thermodynamics to ideal gas. Calculate the change of internal energy, heat transfer, and work done.
7. Explain the scientific method and the importance of verifying theoretical principles in the laboratory.
8. Acquire data in the laboratory, including the use of measuring equipment, the rounding of numbers and the calculation of errors and standard deviations.