1023-L5-703 **Youyu Phillips*** (`youyu.phillips@keystone.edu`), One College Green, La Plume, PA 18440.
Calculus of Chemical Engineering Thermodynamics.

The application of Calculus to Physical Chemistry will be discussed. Chemical Engineering Thermodynamics, as an extended branch of Physical Chemistry, uses many mathematical equations and applies calculus. Calculations of area, energy, acceleration, Virial coefficient, pressure, density, heat capacity, enthalpy, entropy, etc. often involve differentiation or integration of the functions. Examples of differentiation and integration in Chemical Engineering Thermodynamics will be presented. Single variable and multivariable functions e.g. the gas law and van der Waals equation will be demonstrated. First, second and partial derivatives of the potential of a diatomic molecule will be illustrated. Derivative properties such as specific heat capacities will be described. Indefinite, definite integrations and integration round the circular path of work, energy and enthalpy will be reviewed. Oral presentation will be made using Microsoft Power-Point. (Received September 20, 2006)