Lecture 2

Monday, January 12, 2026   12:59 AM

Differential equations are classified into categories. The criteria for classification can be based on:
- The number of independent variables: ordinary differential equation (ODE) or partial differential equation (PDE).
- The number of dependent variables: a single equation or a system of equations.
- The highest order of derivative.
- Linearity/Nonlinearity of the dependent variable.
- Whether the equation depends on the independent variable: autonomous vs non-autonomous.
- Linear equations can be further classified based on whether:
  - The coefficients are constant (constant coefficients) or not (variable coefficients).
  - The right hand side is zero (homogeneous) or not (inhomogeneous).

[Work on the worksheet]