

# Solving Linear Ordinary Differential Equations with constant coefficients

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## **Proposal for Subject of Course Project for the Numerical Methods course**

**Proposed Subject:** Solving Linear Ordinary Differential Equations with constant coefficients

**Linear Ordinary Differential Equations** can be found in various fields of Physics. This topic was mentioned in the second lecture of the Numerical Methods course while describing the problem regarding Radioactive Decay Chains.

These equations can be reduced to exponentiating a matrix. they can be converted into a set of coupled first order differential equations.

The solving of Linear Ordinary Differential Equations would involve converting them into a form that can be written put as a matrix and then performing matrix computations.

The study would deal with the time scales related to the orders of the equations and algorithms related to matrix computation.