

CHAPTER OVERVIEW

5: Second Order Ordinary Differential Equations

Chapter Objectives

- Be able to obtain the general solution of any homogeneous second order ODE with constant coefficients.
- Be able to obtain particular solutions when initial conditions are given.
- Understand how to solve the equation of motion of a pendulum and a spring in non-viscous and viscous media.
- Understand how to solve the Schrödinger equation for the one dimensional particle in the box. Obtain the normalized eigenfunctions and the eigenvalues.

[5.1: Second Order Ordinary Differential Equations](#)

[5.2: Second Order Ordinary Differential Equations - Oscillations](#)

[5.3: Second Order Ordinary Differential Equations with Boundary Conditions](#)

[5.4: An example in Quantum Mechanics](#)

[5.5: Problems](#)

This page titled [5: Second Order Ordinary Differential Equations](#) is shared under a [CC BY-NC-SA 4.0](#) license and was authored, remixed, and/or curated by [Marcia Levitus](#) via [source content](#) that was edited to the style and standards of the LibreTexts platform.