

Midterm Exam Outline

- Boundary Value Problems for Ordinary Differential Equations (ODEs)
 - o Linear Problems
 - o Shooting Method for Linear Case
 - o Finite Difference Approximation

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- o Direct Methods
- Non-linear Problems
- o Shooting Method for Non-linear Case
- o Iterative Methods
- Newton Methods
- o Rayleigh-Ritz Approximation

- Eigenvalue Methods
 - o Linear Algebra Background
 - o Standard Forms
 - o Geršgorin Theorem
 - Power Method