

Syllabus of the Comprehensive Exam

MATH 572 Numerical Analysis of Partial Differential Equations

Topics

- **Finite Difference Methods:** FDM for two-point BVP, FDMs for elliptic equations, FDMs for parabolic equations, FDMs for hyperbolic equations.
- **Finite Element Methods:** FEMs for elliptic equations, FEM for parabolic equations, FEM for hyperbolic equations.

References

- Larsson and Thomee, *Numerical Methods for PDEs with numerical methods*, , Springer, 2009.
- McLean and Mustapha, *Applied numerical methods , lecture notes*, Springer, 2023.