Study Guide for Numerical Analysis Exams

Number systems and errors in digital computation, machine unit round off error. References: [1,2]

Numerical solution of nonlinear equations. References: [1,2]

Interpolation theory and applications. References: [1,2]

Numerical integration in one or more dimensions. References: [1,2]

Spline theory and applications in computer graphics. References: [1,2,3,4]

Numerical differentiation. References: [2,5]

Remainder theory and Peano's Theorem. References: [2,5]

Approximation theory and applications. References: [1,2]

Direct and iterative methods for linear systems. References: [1,2]

Algebraic eigenvalue problem. References: [1,2]

Numerical solution of systems of ordinary differential equations. References: [1,2]

Numerical methods for boundary value problems involving ordinary differential equations. Reference: [1]

Solution of systems of nonlinear equations. References: [1,2]

Optimization and nonlinear least squares techniques. References: [1,2]

References

[1] Burden, R.L. and Faires, J.D., *Numerical Analysis*, 4th edition, PWS Publishers, 1985
[2] Atkinson, K.E., *An Introduction to Numerical Analysis*, 2nd edition, John Wiley and Sons, 1989
[3] Brodies, K.W. (ed.), *Mathematical Methods in Computer Graphics and Design*, Academic Press, 1980
[4] Swan, T., *Mastering Turbo Pascal 5.5*, Hayden Books, 1989
[5] Davis, P., *Interpolation and Approximations*, Blaisdell, 1965

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