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Text Books and References

- 1. B.S. Grewal, Numerical Methods in Engineering and Science with Programs in C & C++,Khanna Publishers (2010).
- 2. S.S. Sastry, Introductory Methods for Numerical Analysis,4th Ed., Prentice Hall of India (2009).
- 3. M.K. Jain, S.R.K. Iyenger and R.K. Jain, Numerical Methods for Scientific and Engineering Computation, 5thEd., New Age International (2007).
- 4. S.C. Gupta and V.K. Kapoor, Fundamentals of Mathematical Statistics, S. Chand Publisher (2007).
- 5. R.K. Jain & S.R.K. Iyenger, Advanced Engineering Mathematics, 3rdEd., Narosa (2002).

COURSE OUTCOMES:

- 1. Enable to get the numerical solution of algebraic, transcendental and system of linear equations.
- 2. Enable to find the missing data points form the given data using interpolation and extrapolation.
- 3. Enable to integrate data set in the absence of actual function using numerical integration.
- 4. Enable to apply various probability distribution functions and statistical measurements in different problems.