

B. Sc. IT (HONS.): 6th Semester						
Course Title	Course Code	Credits- 06			Total Marks- 90	
		Theory	Tutorial	Practical	Theory	Practical
Numerical Methods	BIT620D2A	04	Nil	02	60	30

UNIT-I: Introduction to Numerical Methods.

Introduction-Requirements for solving problems by a computer, pitfalls in computing, approximation and errors, significant figures, accuracy and precision, round-off and truncation errors.

UNIT-II: Roots of Nonlinear Equations.

Introduction, Iterative methods-Bisection method, False Position method, Newton Raphson method, Secant method.

UNIT-III: Linear Algebraic Equations and Interpolation.

Solution of Linear Equations-Introduction, Direct methods-Gauss elimination method, Iterative methods-Gauss Siedel method.

Interpolation-Introduction, Lagrange interpolation, Newton's divided differences interpolation.

UNIT-IV: Regression and Ordinary Differential Equations.

Regression Analysis-Introduction, least squares regression.

Solution of differential equations-Introduction, Euler's method, RungeKutta second order methods (Heun's method and Polygon method).

Note: The Practical Component shall be based on the Unit-I to Unit-IV

Books:

- 1 "Numerical Methods" by E Balaguruswamy, Tata McGraw Hill
- 2 "Computer oriented numerical methods" by V Rajaraman, PHI
- 3 "Computer oriented numerical methods" by R SSalaria, Khanna Book Publishing

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Unix & Shell Programming	BIT620D2B	04	Nil	02	60	30

UNIT-I

Introduction to UNIX operating system: Features of UNIX, structure of UNIX, types of shell, simple UNIX commands (Is, cal, cat, kill, who, pwd, mkdir, chmod, mv, grep, etc).

Shell programming: Shell scripts, executing shell scripts, shell variables, read and echo statements, conditional branching and looping, arrays.

BOOKS RECOMMENDED:

1. Peterson, j.l. Abraham silberschatz, "Operating System Concept". Addison Wesley Publishing Company
2. Dietal, H.M., "An Introduction to Operating System". Addison Wesely Publishing Company
3. Brian W, Kernighan rob pike "The Unix Programming Environment"
4. Yashwant Kanitkar "Unix Shell Programming"

Suggested Reading:

1. Tananbum, A.S., "Modern Operating System", PHI
2. Milenkovic, M., "operating System- Concepts and designs." Cgrag Hill