Lesson Plan

**BCA III semester**

**BCA- 236 COMPUTER-ORIENTED NUMERICAL METHODS**

Teacher name:

October 2020

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| Computer Arithmetic: Floating-point representation of numbers,  arithmetic operations with normalized floating-point numbers and their  consequences, significant figures.  Error in number representation-inherent error, truncation, absolute,  relative, percentage and round-off error.  Iterative Methods: Bisection, False position, Newton-Raphson method.  Iteration method, discussion of convergence, Bairstow's method. |

November 2020

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| Solution of simultaneous linear equations and ordinary differential  equations: Gauss-Elimination methods, pivoting, Ill-conditioned  equations, refinement of solution. Gauss-Seidal iterative method, Euler  method, Euler modified method, Taylor-series method, Runge-Kutta  methods, Predictor-Corrector methods. |

December 2020

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| Interpolation and Approximation:  Polynomial interpolation: Newton, Lagranges, Difference tables,  Approximation of functions by Taylor Series.  Chebyshev polynomial: First kind, Second kind and their relations,  Orthogonal properties. |

January2021

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| Numerical Differentiation and integration: Differentiation formulae  based on polynomial fit, pitfalls in differentiation |

February 2021

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| Trapezoidal &  Simpson Rules, Gaussian Quadrature. |