**PG.GOVT COLLEGE FOR GIRLS, SECTOR-42, CHANDIGARH**

**Teaching Plan Session Odd Semester**

**(2018-19)**

**Class: BCA II (3rd semester) Name of the Teacher: Ms. Nidhi Goyal**

**Subject: Computer Oriented Numerical Methods Period : 6th and 2nd**

**Paper : BCA-16-304 Room No : 205 (IT Block)**

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| **S. No** | **Date From** | | **Date Upto** | **Topics to be covered** |
| Week 1 | **(For ongoing classes)** | | | Introduction about the subject .  Introduction to differentiation, integration and matrix algebra. |
| July 24, 2018 | | July 28, 2018 |
| Week 2 | July 30, 2018 | August 4, 2018 | | Solution of Non-Linear Equations:  Introduction, Types of Non-Linear Equations: Polynomial Equations, Transcendental Equations, |
| Week 3 | August 6, 2018 | August 11, 2018 | | Methods of Finding Solutions of Non-Linear equations: Direct Method, Iterative Method. Iterative Methods: Bisection Method |
| Week 4 | August 13, 2018 | August 18, 2018 | | Iterative Methods: False-Position Method Secant Method, Newton - Raphson Methods |
| Week 5 | August 20, 2018 | August 25, 2018 | | Zeros of a polynomial using Birge – Vieta Method. Convergence of  Iterative Methods |
| Week 6 | August 27, 2018 | September 1, 2018 | | Simultaneous Linear Equations: Solution of Simultaneous Linear Equations using Direct and Iterative Methods: Direct Methods: Gauss – Elimination Method, Gauss-Jordan Method, |
| Week 7 | September 3, 2018 | September 8, 2018 | | Concept of Pivoting, Iterative Method: Gauss-Seidal Method. |
| Week 8 | September 10, 2018 | September 15, 2018 | | Data Representation and Computer Arithmetic : Introduction, Concept of Exact and Approximate Numbers, Concept of Significant digits, Representation of Numbers in  Memory, Storage of Integer Numbers: Signed Representation, 1’s Complement Representation, 2’s Complement Representation, Floating Point Numbers and their storage, |
| Week 9 | September 17, 2018 | September 22, 2018 | | Floating Point Arithmetic, Normalization and their consequences |
| Week 10 | September 24, 2018 | September 29, 2018 | | Errors, Measures of Accuracy: Absolute Error, Relative Error and Percentage Error, Error types: Data Errors,  Truncation Errors, Round-Off Errors, Computational Errors, Rules, Relati  onship between Relative Error and Significant digits and Error Propagation: Error Propagation in Addition Operation, Subtraction Operation, Multiplication Operation and Division Operation. |
| Week 11 | October 1, 2018 | October 8, 2018 | | Revision and class tests of the syllabus covered |
| **MID SEMESTER EXAMINATION (October 11, 2018 to October 17, 2018)** | | | | |
| Week 12 | October 20, 2018 | October 27, 2018 | | Interpolation: Introduction, Lagrange Interpolation, Inverse Interpolation, Finite Differences: Forward Differences, Backward Differences, Divided Differences, Difference  Tables: Forward Difference Table, Backward Difference Table, |
| Week 13 | October 29, 2018 | November 3, 2018 | | Divided Difference Table, Observations regarding Difference Tables, Newton’s Method of Interpolation: Newton’s Forward Difference Interpolation Formula, |
| Week 14 | November 5, 2018 | November 10, 2018 | | Newton’s Method of Interpolation: Newton’ s Backward Difference Interpolation Formula |
| Week 15 | November 12, 2018 | November 17, 2018 | | Numerical Integration: Introduction, Newton-Cotes Integration Formulae: Trapezoidal Rule |
| Week 16 | November 19, 2018 | November 22, 2018 | | Numerical Integration : Simpson’s 1/3rd Rule, Simpson’s 3/8th Rule. |
| Week 17 | November 26, 2018 | December 1, 2018 | | Revision of whole syllabus |