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

**Teaching Plan Session Odd Semester**

**(2017-18)**

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

**Subject: Operating System Concepts and Linux Period :3rd (Wed-Sat)**

**Paper : Room No : 205**

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| **S. No** | **Date From** | **Date Upto** | | **Topics to be covered** |
| Week 1 | July 22 & July 24 2017 | July 29, 2017 | | 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 |
| Week 2 | July 31 2017 | Aug 5, 2017 | | Floating Point Numbers and their storage, Floating Point Arithmetic, Normalization and their consequences |
| Week 3 | Aug 7, 2017 | Aug 12, 2017 | | Errors, Measures of Accuracy: Absolute Error, Relative Error and Percentage Error, Error types: Data Errors, Truncation Errors, Round-Off Errors, Computational Errors, Rules, Relationship between Relative Error and Significant digits and Error Propagation: Error Propagation in Addition Operation, Subtraction Operation, Multiplication Operation and Division Operation. |
| Week 4 | Aug 14, 2017 | Aug 19, 2017 | | Solution of Non-Linear Equations: Introduction, Types of Non-Linear Equations: Polynomial Equations, Transcendental Equations, Methods of Finding Solutions of Non-Linear equations: Direct Method, Iterative Method. |
| Week 5 | Aug 21, 2017 | Aug 26, 2017 | | Iterative Methods: Bisection Method, False-Position Method, Secant Method |
| Week 6 | Aug 28, 2017 | Sept 2, 2017 | | Newton - Raphson Methods, Zeros of a polynomial using Birge – Vieta Method. Convergence of Iterative Methods: Convergence of Bisection Method, Convergence of False Position Method, Convergence of Newton- Raphson Method, Convergence of Secant Method, Comparison between Iterative Methods. |
| Week 7 | Sept 4, 2017 | Sept 9, 2017 | | Simultaneous Linear Equations: Solution of Simultaneous Linear Equations using Direct and Iterative Methods: Direct Methods: Gauss – Elimination Method, Gauss-Jordan Method, |
| Week 8 | Sept 11, 2017 | Sept 16, 2017 | | Simultaneous Linear Equations: Concept of Pivoting, Iterative Method: Gauss-Seidal Method. |
| Week 9 | Sept 18, 2017 | Sept 23, 2017 | | Numerical Integration: Introduction, Newton-Cotes Integration Formulae: Trapezoidal Rule |
| Week 10 | Sept 25, 2017 | Sept 29, 2017 | | Numerical Integration: Simpson’s 1/3rd Rule, Simpson’s 3/8th Rule. |
| **Autumn Break (30 Sept 2017- 09 Oct 2017)**  **Mid Semester Exam (10 Oct 2017 – 17 Oct 2017)** | | | | |
| Week 11 | Oct 18, 2017 | | Oct 21, 2017 | Interpolation: Introduction, Lagrange Interpolation, Inverse Interpolation, Finite Differences: Forward Differences, Backward Differences, Divided Differences |
| Week 12 | Oct 23, 2017 | | Oct 28, 2017 | Difference Tables: Forward Difference Table, Backward Difference Table, Divided Difference Table, Observations regarding Difference Tables |
| Week 13 | Oct 30, 2017 | | Nov 4, 2017 | Newton’s Method of Interpolation: Newton’ s Forward Difference Interpolation Formula, Newton’s Backward Difference Interpolation Formula, Newton’ s Divided Difference Interpolation Formula. |
| Week 14 | Nov 6, 2017 | | Nov 11, 2017 | Approximation: Approximation of functions: Taylor Series Representation, Chebyshev Polynomials. |
| Week 15 | Nov 13, 2017 | | Nov 18, 2017 | Solution of Ordinary Differential Equations : Introduction, Euler’s Method, Runga–Kutta Methods: 2nd order |
| Week 16 | Nov 20, 2017 | | Nov 25, 2017 | Runga–Kutta Methods: 4th order, Predictor Corrector Methods: Modified Euler’s Method. |
| Week 17 | Nov 27, 2017 | | Dec 1, 2017 | Revision of Syllabus |

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

**Teaching Plan Session Odd Semester**

**(2017-18)**

**Class: M.Sc IT – I (1st sem) Name of the Teacher: Ms. Nidhi Goyal**

**Subject: Computer Algorithm Period :5th (Mon-Tues) and 2nd (Fri-Sat)**

**Paper : Room No : BCA Lab 3 and 205**

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| **S. No** | **Date From** | **Date Upto** | | **Topics to be covered** |
| Week 1 | July 22 & July 24 2017 | July 29, 2017 | | Late Admissions (Classes started from 11th August, 2017) |
| Week 2 | July 31 2017 | Aug 5, 2017 | |
| Week 3 | Aug 7, 2017 | Aug 12, 2017 | | **Introduction to Data Structure:** BasicConcepts, Definition, Types and Operations. **Arrays and Stacks:** Concepts, Operations, Algorithms |
| Week 4 | Aug 14, 2017 | Aug 19, 2017 | | **Trees:** Concepts, Operations, Algorithms |
| Week 5 | Aug 21, 2017 | Aug 26, 2017 | | **Graphs:** Concepts, Operations, Algorithms |
| Week 6 | Aug 28, 2017 | Sept 2, 2017 | | **Algorithm & Analysis:** Complexity (Space and Time), Performance, Recurrence. |
| Week 7 | Sept 4, 2017 | Sept 9, 2017 | | **Divide and Conquer:** General method, Binary search, Merge sort, |
| Week 8 | Sept 11, 2017 | Sept 16, 2017 | | **Divide and Conquer:** Quick Sort, Selection problem, Strassen's matrix multiplication and analysis of these problems. |
| Week 9 | Sept 18, 2017 | Sept 23, 2017 | | **Divide and Conquer:** Strassen's matrix multiplication and analysis of these problems |
| Week 10 | Sept 25, 2017 | Sept 29, 2017 | | **Greedy Method:** General Method, Knapsack problem, Job sequencing with deadlines |
| **Autumn Break (30 Sept 2017- 09 Oct 2017)**  **Mid Semester Exam (10 Oct 2017 – 17 Oct 2017)** | | | | |
| Week 11 | Oct 18, 2017 | | Oct 21, 2017 | **Greedy Method:** Minimum spanning Trees (Prim's Algorithm, Kruskal's Algorithm), Single source shortest paths and analysis of these problems. |
| Week 12 | Oct 23, 2017 | | Oct 28, 2017 | **Dynamic Programming:** General method, Optimal binary search trees, 0/1 Knapsack, |
| Week 13 | Oct 30, 2017 | | Nov 4, 2017 | **Dynamic Programming:** The traveling salesperson problem, Single Source Shortest Path Problem (Bellman Ford Algorithm), All pair shortest path problem (Floyd's Algorithm). |
| Week 14 | Nov 6, 2017 | | Nov 11, 2017 | **Back Tracking:** General method, N queen's problem, Graph coloring, Hamiltonian cycles, Analysis of these problems. |
| Week 15 | Nov 13, 2017 | | Nov 18, 2017 | **Branch-And-Bound:** General Method, 0/1 Knapsack, Traveling Salesperson problems. |
| Week 16 | Nov 20, 2017 | | Nov 25, 2017 | **NP-hard and NP-complete problems:** Basic concepts, Statement of Cook's Theorem, Satisfiability SAT |
| Week 17 | Nov 27, 2017 | | Dec 1, 2017 | **Examples of NP-hard graph** [Clique Decision Problem, Chromatic Number Decision Problem] and NP-scheduling problems [Scheduling Identical Processors, Job Shop Scheduling]. |