**Post Graduate Govt. College for Girls, Sector-42, Chandigarh**

**Teaching Plan for Post Graduate (First Semester)**

**Session (2020-2021)**

**Class: M.Sc (IT) 1 Semester Name of the Teacher: Sudhir Kumar Sharma**

**Subject: Software Engineering Paper: MS-61**

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| **S. No** | **Dates** | **Topics to be Covered** |
| Week 1 | 03/11/2020 – 07/11/2020 | Introduction to Software Engineering: Definition, Software Engineering goals,  Characteristics of well-engineered software. |
| Week 2 | 09/11/2020 – 12/11/2020 | Software Process Models: Waterfall Model, Prototyping Model, Spiral Model, RAD, Agile Modelling. |
| Week 3 | 16/11/2020 – 21/11/2020 | Software Requirement Specification (SRS): Software Requirements, Definition of SRS, Characteristics of SRS, Components of SRS, Designing of SRS. System Analysis: Principles of Structures Analysis, DFDs, E-R Diagrams, Data Dictionary. |
| Week 4 | 23/11/2020 – 28/11/2020 | Software Design: Design Objectives, Design Principles, Concepts, Design Process, Design Methodologies: |
| Week 5 | 01/12/2020 – 05/12/2020 | Structured Design, Modular Design, Object Oriented Design, User Interface Design and its elements and its Characteristics. |
| Week 6 | 07/12/2020 – 12/12/2020 | Software Project Planning & Scheduling: Objectives, Decomposition techniques, Planning and Scheduling Tools: |
| Week 7 | 14/12/2020 – 18/12/2020 | GANTT Chart, PERT Chart, Critical Path Method and Work Breakdown Structure; Cost estimation. |
| Week 8 | 21/12/2020 – 26/12/2020 | Cost estimation Models: Single Variable Model, COCOMO Model; Software Risks, Risk Assessment. |
| Week 9 | 28/12/2020 – 02/01/2021 | Software Metrics: Role of Metrics and Measurement, Types of Software Metrics: Product Metrics. |
| Week 10 | 04/01/2021 – 09/01/2021 | Software Size Metrics: LOC and Function Points, Process Metrics, People Metrics. |
| Week 11 | 11/01/2021 – 16/01/2021 | System Maintenance and Reliability: Maintenance and its types; Factors Affecting Software Reliability. |
| Week 12 | 18/01/2021 – 23/01/2021 | Software Reliability vs Hardware Reliability, Software Reliability Metrics. |
| Week 13 | 25/01/2021 – 30/01/2021 | Software Testing Techniques: Introduction to Software Testing Process, Objectives of Software Testing. |
| Week 14 | 01/02/2021 – 06/02/2021 | BBT & its Techniques: Boundary Value Analysis, Equivalence Class Testing, and Cause. |
| Week 15 | 08/02/2021 – 13/02/2021 | Effect Graph, White-Box Testing and its Techniques: Domain and Boundary Testing, Logic Based Testing. |
| Week 16 | 15/02/2021 – 20/02/2021 | Data Flow Testing and Basic Path Testing. Software Testing Strategies: Characteristics, Integration Testing. |
| Week 17 | 22/02/2021 – 27/02/2021 | Functional Testing, Object Oriented Testing, Alpha and Beta Testing. |