

5th Semester (Code-501 Dot Net Framework and C#)

Unit-1

The Net framework: Introduction, The Origin of .Net Technology, Common Language Runtime (CLR), Common Type System (CTS), Common Language Specification (CLS), Microsoft Intermediate Language (MSIL), Just-In-Time Compilation, Framework Base Classes.

Unit-2

C-Sharp Language (C#): Introduction, Data Types, Identifiers, Variables, Constants, Literals, Array and Strings, Object and Classes, Inheritance and Polymorphism, Operator Overloading, Interfaces, Delegates and Events, Type conversion.

Unit-3

C# Using Libraries: Namespace- System, Input-Output, Multi-Threading, Networking and sockets, Managing Console I/O Operations, Windows Forms.

Unit-4

Advanced Features Using C#: Web Services, Window Services, Asp.net Web Form Controls, ADO.Net. Distributed Application in C#, Unsafe Mode.

Unit-5

Net Assemblies and Attribute: .Net Assemblies features and structure, private and share assemblies, Built-In attribute and custom attribute.

5th Semester (Code-502 Web Technology)

Unit-1

Introduction: Introduction to web, protocols governing the web, web development strategies, Web applications, web project, web team.

Unit-2

Web Page Designing: HTML: list, table, images, frames, forms, CSS: XML: DTD, XML schemes, presenting and using XML.

Unit-3

Scripting: Java script: Introduction, documents, forms, statements, functions, objects, event and event handling: introduction to AJAX, VB Script.

Unit-4

Server Site Programming: Introduction to active server pages (ASP), ASP.NET, java server pages (JSP), JSP application design, tomcat server, JSP objects, declaring variables, and methods, debugging, sharing data between JSP pages, Session, Application: data base action, development of java beans in JSP, introduction to COM/DCOM.

Unit-5

PHP (Hypertext Preprocessor): Introduction, syntax, variables, strings, operators, if-else, loop, switch, array, function, form , mail, file upload, session, error, exception, filter, PHP- ODBC.

5th Semester (Code-503 Operations Research)

Unit-1

Linear programming problems Mathematical formulation, graphical method of solution, simplex method.

Unit-2

Duality in linear programming problems, dual simplex method, sensitivity analysis, transportation and assignment problems, Traveling salesman Problem.

Unit-3

Game theory Introduction, two-person zero-sum games, some basic terms, the maxminiminimax principle, games without saddle points-Mixed Strategies, graphic solution of $2 \times n$ and $m \times 2$ games, dominance property. CPM & PERT- project scheduling, critical path calculations, Crashing.

Unit-4

Queueing theory -basic structure of queuing systems, roles of the Poisson and exponential distributions, classification of queues basic results of M/M/1: FIFO systems, extension to multi-server queues.

Unit-5

Simulation: simulation concepts, simulation of a queuing system using event list, pseudo random numbers, multiplication congruential algorithm, inverse transformation method, basic ideas of Monte-Carlo simulation.

S5th Semester (Code-504 IT Infrastructure and E-Governance)

Unit-1

Introduction: E-Governance: Needs of E-Governance, Issues in E-Governance applications and the Digital Divide, Evolution of E-Governance, Its scope and content, Present global trends of growth in E Governance, Other issues.

Unit-2

II Models of E-Governance: Introduction; Models, Mobilization and Lobbying Model, Interactive-service Model/Government-to-Citizen-to-Government Model (G2C2G), Evolution in E-Governance and Maturity Models: Five Maturity Levels, Characteristics of Maturity Levels, Key areas, Towards Good Governance through E-Governance Models.

Unit-3

E-Governance Infrastructure and Strategies: E-readiness: Digital System Infrastructure, Legal Infrastructural Preparedness, Institutional Infrastructural Preparedness, Human Infrastructural Preparedness, Technological Infrastructural Preparedness, Evolutionary Stages in E-Governance.

Unit-4

Data Warehousing and Data Mining in Government: Introduction; National Data Warehouses: Census Data, Prices of Essential Commodities, Other areas for Data Warehousing and Data Mining: Agriculture, Rural Development, Health, Planning, Education, Commerce and Trade, Other Sectors.

Unit-5

Case Studies: Indian Context: Cyber Laws, India: NICNET, Collectorate, Computer- aided Administration of Registration Department (CARD), Smart Nagarpalika, IT in Judiciary, EKhazana, E-Panchyat, General Information Services of National Informatics Centre; E- Governance initiative in USA, E-Governance in China, E-Governance in Brazil and Sri Lanka.

5th Semester (Code-505 Software Engineering)

Unit-1

Introduction: Introduction to fundamental design activities, Information and information systems, Characteristics of information, relation between information and knowledge, Basics of Information system design, Four different modeling approaches, System development activities and tools, Introduction to System development life cycle models.

Unit-2

Software Requirement Specifications: Requirement Engineering process, Review and management of users needs, System Feasibility Analysis, Information Modeling, Data Dictionary, Decision Tables, Decision Trees, Context Diagram, Data Flow Diagram, Entity Relationship diagram, Introduction to Object Oriented analysis & UML tools - Class Diagram, Use Case Diagram, Sequence Diagram, State Machine Diagram and Activity Diagram, User interface design (HCI), SRS Document, Documentation of project.

Unit-3

Software Design & Testing: Basic concept of software design, Program flowchart and System Flowchart, Block level Design, Architectural design, Detailed Design, Introduction to design methodology: Top Down, Bottom up, Inside out, Outside in, Concept of Coupling & Cohesion, Software Testing: Unit Testing, Integration Testing, Acceptance Testing, Regression Testing, Testing for functionality and Testing for performance, Gorilla Testing, Soak Test, Black box Testing and White Box Testing.

Unit-4

Software Maintenance and Management: Need for maintenance, Maintenance categories: Preventive, Corrective, and Perfective, Cost of maintenance, Software Reengineering, Reverse Engineering, Software configuration management activities, Introduction to CASE tools, GANTT Chart, PERT Chart: COCOMO Model, Introduction to Software Risk analysis and management.