Teacher Name: Dr. V. B. Waghmare

Class	Subject	Total Units	Completed Units	Remaining Units
B.Sc. III[rd] Year	Paper – X Visual Programming Using C#	4	**Unit -II Introduction (7)** 1.1 Overview, Architecture, Features of .NET , 1.2 Meta data, CLR, Managed and unmanaged code 1.3 CTS, CLS, .NET base classes, JIT Compiler 1.4 Introduction to Visual Studio .NET IDE **Unit -II Introduction To C# (10)** 2.1 Introduction to C#, Entry point method, command line arguments 2.2 Compiling and building projects, Compiling a C# program using command line utility, CSC.EXE, Different valid forms of main. 2.3 Global stack and heap memory, reference type and data type, casting-implicit and explicit 2.4 Boxing and unboxing, pass by value and pass by reference and out parameters 2.5 Partial class, DLL, Difference between DLL and EXE **Unit-III Introduction to Web Programming (13)** 3.1 Understanding role of WEB server and WEB browser, HTTP request and response structure. 3.2 Introduction to ASP, Types of path, FORM tag 3.3 Types of server controls 3.4 Validation controls-Base validator, compare validator, range validator, grouping control validator 3.5 Web forms life cycle. 3.6 Event handling in WEB forms, Response.Redirect, Server.Response, cross page, post back property of button. 3.7 ASP.NET state management 3.8 WEB.config, globalization and localization, AppDomain **Unit-IV ADO .NET (10)** 4.1 Introduction to ADO.Net 4.2 ADO.NET Architecture- Connection, command, data reader, data adapter, data set 4.3 Understanding connected layer of ADO.NET and disconnected layer of ADO.NET	**NIL**
B.Sc. II[nd] Year	Paper – V : Fundamentals of Software Engineering	4	**Unit – I : Introduction to System Analysis: (5)** Definition of system, elements and characteristics of system, Types of system, Role and responsibilities of system analyst, Skill of system analyst. **Unit – II: Software Engineering: (10)** Definition, characteristics of software, Qualities (correctness, reliability, user friendliness, robustness, efficiency, maintability, reusability, portability, productivity, visibility), Software problem, System Development Life Cycle (SDLC): Classical model, water fall model. **Unit – III: System Analysis: (10)** Requirement Analysis (Anticipation, Investigation, specification), Feasibility study (Economic, operational, technical), Fact finding technique (observations, record review, interviews, questionnaires, study of physical system), Analysis and Design tools (Data Flow Diagramsguidelines, logical and physical), Decision Tables, . Decision Trees, Entity Relationship Diagrams- Concept of Entity, Attributes, Types Of relation. **Unit–IV: System Design, implementation and testing: (15)** Input and Output Design and their types, Forms of Normalization (First, Second, Third), Database Design (File structure, File Organization, Important types of file, Database/ file operation), **Unit–IV:** Data dictionary, System Implementation: Hardware and software selection, manual implementation, online implementation, real-time implementation, construction of system (Traditional approach, Incremental approach), Software Testing: (White Box, Black Box, Alpha, Beta), Change Over, Quality Assurance.	**NIL**

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Teacher Name: Ms. V. L. Badadare				
Class	**Subject**	**Total Units**	**Completed Units**	**Remaining Units**
B.Sc II[nd] Year	C++ programming	4	**Unit – I: Concept of OOP: (10)** Difference between POP and OOP , Features of OOP, Application of OOP, General Structure of C++ program, Stream , Input, output stream , Handling Input and Output operations in C++, need of iostream.h file ,Managing outputs with manipulators. **Unit - II: Classes in C++: (10)** How the class is different form 'C' Structure , Definition and syntax of class, various access specifiers- private , public and protected used in it, Member data and Member function of a class , Defining member functions inside the class, outside the class, Characteristics of member function, defining objects, array of objects, Handling static data member. **Unit – III: Constructors and Destructors: (11)** Need of Constructor, Definition of constructor, syntax, rules and its use, Types of constructors, Friend function, Friend function to a class, passing object as parameters, common friend for two classes. Need of Destructor Definition of destructors, syntax, rules and use, **Unit – IV: Operators overloading: (12)** Defining operator overloading, overloading function, rules for operator overloading, Overloading of arithmetic operators(+,-,/,*), relational operators(<,>,==), unary operators(++,--,-), Concept of function overloading, Overloading of constructors.	**NIL**

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Teacher Name: Ms. J. A. Chavan				
Class	**Subject**	**Total Units**	**Completed Units**	**Remaining Units**
B.Sc III[rd] Year	Networking Concept and Administration	4	**Unit-1 Introduction to Computer Network (10)** Definition, Goals, Application, Basic Concept: Entities, Layers, Protocols, Computer Network. Classification Of Computer Network: Transmission Techniques, Scale, Connection Method, Functional Relationship, Network Topology, services provided Protocols, Network Architecture: Protocol Hierarchy, Information flow design issues for the layers, Merits and demerits of layer architecture, service primitives, standardization network. **Unit-2 Data Communication (10)** Objectives, four analysis, Band limited signal, Maximum data rate & channel. Transmission Impairments: Attenuation Distortion, Delay, Dispersion, Noise. Data Transmission modes: Serial & Parallel, Simplex, Half Duplex, Full Duplex & Simplex. Synchronous & Asynchronous Transmission. **Unit-3 Introduction to Windows Server 2008 (10)** Managing Windows Server 2008: 1. Working with administrative tool using control panel, Graphical administrative tool & command line utility. 2. Working with computer management: Computer management system tools, Computer management storage tools, computer management services and application tools. 3. Using system console. **Unit-4 Managing Active Directory (10)** Active Directory Physical Architecture: Top level view, Local security Authority, Directory service architecture, Data storage architecture. Logical Architecture: Object, Domain, Trees & forests Trust. Managing Users & Computers, Managing Domain user account, Types of user, User account policies, Password setting, User account capabilities, Properties & Rights, Create computer account, Organization Chart.	**NIL**

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(AUTONOMOUS)

Teacher Name: Ms. R. Y. Patil				
Class	**Subject**	**Total Units**	**Completed Units**	**Remaining Units**
B.Sc. IIIrd Year	Paper – XI Linux Operating System	**4**	**Unit -1: Introduction (10)** Linux History and architecture of Linux system, shell, Types of shell's, Operating system services, Kernel, Kernel shell relationship, Login, Logout, Remote login, GPU(General Purpose Utilities) clear, script, cal, who, bc, wc, head, tail. **Unit -2: Handling Buffer Cache, File and Directories (10)** Buffer, headers, structure of the buffer pool, scenarios for retrieval of a buffer, advantage and disadvantage of the buffer cache, inodes, structure of regular file, change file access permissions with chmode command, directories, directory management commands- cd, mkdir, rmdir. **Unit -3: System calls and Process (10)** Open, read, write, process states and transitions, process creation, signals, process termination, a waiting process termination, process management- ps, kill, background processing, no hang up, job scheduling using at command. **Unit -4: VI Editor and simple shell programming (10)** Use and features of vi, modes of operation- a) Commamd mode- text management, repeat factor. b) Insert mode- insert, append, replace text. c) Ex mode- saving the text, global substitution etc. Writing and running the shell script, read, echo, decisions and loop control structure, file tests, exit etc.	**NIL**
B.Sc. Ist Year	Problem Solving Using Computer (Python Programming)	**3**	**UNIT-I-Introduction to Programming Languages**: Programming languages-their classification and characteristics, language translators and language translation activities Planning the Computer Program: What is program and programming paradigms Concept of problem Solving, Problem definition, Program design, Debugging, Types of errors in programming, Documentation. Techniques of Problem Solving: Algorithms, Flowcharting, Structured programming concepts, Programming methodologies viz. top-down and bottom-up programming. **UNIT-II-Building Blocks of Program:** Data, Data Types, Data Binding, Variables, Constants, Declaration, Operations on Data such as assignment, arithmetic, relational, logical or boolean, ternary, bitwise, increment or decrement operators. Introduction to Python Programming: Features, Structure of a Python Program(Python Shell Indentations, Comments), Python Interpreter, Writing and executing simple program, Basic Data Types: numbers(int, long, float, complex), strings, Declaring variables, Performing assignments, arithmetic operations, Sequence Control – Precedence of operators, Type conversion, Simple input-output (print(), raw_input(),input()) **UNIT-III- Conditional Statements:** if, if-else, nested if –else Looping: for, while, nested loops, else clause with while and for loop Control statements: Terminating loops, skipping specific conditions(break, continue, pass) Numeric Functions: abs(), ceil(), floor(), max(), min(), pow(), sqrt() String Manipulation: Declaring strings, String immutability, Unicode string (u'String'), escape sequences(\), Operations on String (Concatenation (+), Repetition (*), Slicing ([index]), Range Slicing([start:end] or [:end] or [start:] , Member ship operator (in, not in)), String Functions : capitalize(), len(), lower(), swapcase(), upper()	**NIL**

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Teacher Name: Mr. I. K. Mujawar				
Class	**Subject**	**Total Units**	**Completed Units**	**Remaining Units**
B.Sc Ist Year (Sem I)	Problem Solving Using Computer (Python Programming)	3	**Unit-I -Lists:** Creating a list, Displaying list(print()), Basic Operation(Length (len()), Concatenation(+), Repetition(*), Membership (in, not in),Iteration (for var in list), Slicing, Updating(=) and deleting(del) elementof a list. Compare (cmp()), Maximum(max()) and minimum (min())),List Methods (Append (list.append()), Count (list.count()), Insert object (list.insert()), Remove (list.remove(), list.pop()), Reverse (list.reverse())) **Tuples** (sequence of immutable objects) : Creating tuples(using ()brackets) and Deleting tuple(del), empty tuple, Displaying(print()), Basic Operation(Length (len()), Concatenation(+), Repetition(*), Membership (in, not in), Iteration (for var in list), Slicing, Updating(=) and deleting(del) element of a list, Compare (cmp()), Maximum(max()) and minimum (min())) Unit-II **-Dictionaries** – Concept of dictionary, Creating Dictionary ({Key:Value,...}), Values are mutable objects but keys are immutable object, Properties of Dictionary keys, Basic Operation(Length (len()), Compare (cmp())), Dictionary Methods(Clear (dict.clear())), Existance of Key (dict.has_key()), List of dictionaries tuple pairs (dict.items()), List of keys (dict.keys()), Add dictionary (dict.update()), Dictionary Values (dict.values())) **Functions:** Defining Functions(def, name, arguments, : , function suite, return statement), calling a function, Pass arguments by value or by reference(using list), Advantages of functions, types of functions, function parameters(required, keyword, default), anonymous functions or ternary operator(lambda), Scope of a variable(global and local) **Modules:** Importing module, Creating & exploring modules, Math module, Random module, Time module, rules of locating module, namespace and scope (local and global), Functions for Modules (List of elements (dir()), List of Local elements (locals()), List of Global elements (globals()), Re importing module (reload())) **Unit-III-**Algorithm, Searching and Sorting – Searching(Linear, Binary) and sorting techniques (Bubble, Insertion, Merge), Efficiency of algorithms Python File Input-Output: Opening and closing file, Various types of file modes, reading and writing to files	**NIL**
B.Sc IIIrd Year (Sem V)	PHP and MySQL	4	**Unit-1:Fundamental of PHP (10)** 1.1 Concept of PHP 1.2 Constants, variables declaration 1.3 Comments 1.4 Data types 1.5 Operators 1.6 Command line arguments **Unit-2: Branching and Looping statements (10)** 2.1 Conditional statements 2.1.1 If-else 2.1.2 Switch 2.1.3 Ternary operators 2.2 Looping statements 2.2.1 For loop 2.2.2 While loop 2.2.3 Do-while loop **Unit 3: Arrays in PHP (8)** 3.1 Creating arrays 3.2 Inserting elements in arrays 3.3 Retrieving elements from array 3.4 Displaying arrays 3.5 Sorting array elements **Unit-4:Developing Applications in PHP using MySQL (12)** 1.1 Introduction to Databases 1.1.1 Creating database 1.1.2 Creating tables 1.1.3 Inserting values in table **Unit-4:Developing Applications in PHP using MySQL (12)** 1.1.4 Displaying, changing, searching, deleting records from the table 4.2 Developing applications in PHP 4.2.1 Arithmetic operators through GUI 4.2.2 Web calculator 4.2.3 SQL queries- insert, select, delete, update, where, order by.	**NIL**

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