

Annual Teaching Plan

Academic year:2025-2026

Course Title: Computer Architecture

Name of the teacher: Miss. V.A.Kotamire, Miss. P.P. Misal, Miss. P.P.Deshmukh

Month : October			Module 1	Sub-Units Planned
Lecture	Practical	Total	Digital Principles & Number Systems:	Digital Principles: Definition for Digital signals, Digital logic, Digital computers, Von Neumann Architecture, Boolean Laws and Theorems, K-Map: Truth Tables to K-Map, 2, 3 and 4 variable K Map, K-Map Simplifications, Don't Care Conditions, SOP and POS. Number Systems: Decimal, Binary, Octal, Hexadecimal, Number System Conversions, Binary Arithmetic, Addition and subtraction of BCD, Octal Arithmetic, Hexadecimal Arithmetic, Binary Codes, Decimal Codes, Error detecting and correcting codes, ASCII, EBCDIC, Excess3 Code, The Gray Code.
16	24	40		
Month : November			Module 2	Sub-Units Planned
Lecture	Practical	Total	Combinational Circuits & Register:	Combinational Circuits: Half Adder and Full Adder, Subtractor, Decoders, Encoder, Multiplexer, Demultiplexer Sequential Circuits: Flip-Flops- SR Flip-Flop, D Flip-Flop, J-K Flip-Flop, T Flip-Flop. Register: 4 bit register with parallel load, Shift Registers- Bidirectional shift register with parallel load Binary Counters-4 bit synchronous and Asynchronous binary counter.
16	24	40		
Month : December			Module 3	Sub-Units Planned
Lecture	Practical	Total	Basic Computer Organization and Design & Central Processing Unit:	Lists-Create a List, Get and Set Items ,Add and Remove Items, List Slices, Different List Methods TUPLES - Creation and Accessing Values, Updating Tuples, Deleting Tuple Elements, Basic Tuples Operations, Indexing, Slicing DICTIONARY- Accessing Values in Dictionary, Updating Dictionary, Delete Dictionary Elements, Properties of Dictionary Keys, Built In Dictionary Functions and Methods. SETS -Concept of Sets, Creating, Initializing and Accessing the Elements, Sets Operation.
16	24	40		

Month : January			Module 4	Sub-Units Planned
Lecture	Practical	Total	Pipeline and Vector Processing & Memory Organization:	Pipeline and Vector Processing: Parallel Processing, Pipelining, Arithmetic Pipeline, Instruction Pipeline, RISC Pipeline. Input-Output Organization: Peripheral Devices, Input-Output Interface, Asynchronous data transfer, Modes of Transfer, Priority Interrupt, Direct memory Access, Input-Output Processor(IOP). Memory Organization: Memory Hierarchy, Main Memory, Auxiliary memory, Associate Memory, Cache Memory, Virtual Memory, Memory Management Hardware.
16	24	40		

Vivekanand College (An Empowered Autonomous Institute), Kolhapur

Annual Teaching plan

Department : BCA

Academic Year : 2025-26

Term : I

Course Title: Mathematics Foundation to Computer Science - I (BCA-I Sem-I)

Name of the teacher: Mr.Kedar Dattatray Morabale

Month : October - November			Unit I	Sub Unit Planned
Lecture	Practical	Total		
14	0	14	Set, Relation and Function	Set, Set Operations, Properties of Set operations, Subset, Venn Diagrams, Cartesian Products. Relations on a Set, Properties of Relations, Representing Relations using matrices and digraphs, Types of Relations, Equivalence Relation, Equivalence relation and partition on set, Closures of Relations, Functions, properties of functions (domain, range), composition of functions, surjective (onto), injective (one-to-one) and bijective functions, inverse of functions.
Month : November - December			UNIT II	Sub Unit Planned
Lecture	Practical	Total		
10	0	10	Counting and Recurrence Relation	Basics of counting, Pigeonhole principle, permutation, combination, Binomial coefficients, Binomial theorem
Month : December - January			UNIT III	Sub Unit Planned
Lecture	Practical	Total		
10	0	10	Elementary Graph Theory	Basic terminologies of graphs, connected and disconnected graphs, subgraph, paths and cycles, complete graphs, digraphs, weighted graphs, Euler and Hamiltonian graphs. Trees, properties of trees, concept of spanning tree. Planar graphs. Definitions and basic results on the topics mentioned
Month : January- February			UNIT IV	Sub Unit Planned
Lecture	Practical	Total		
14	0	14	Matrix Algebra	Types of matrices, algebra of matrices–addition, subtraction, and

				multiplication of matrices, determinant of a matrix, symmetric and skew-symmetric matrices, orthogonal matrix, rank of a matrix, inverse of a matrix, applications of matrices to solve system of linear equations, Eigen values and Eigen vectors, Caley-Hamilton theorem.
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Mr. Kedar Dattatray Morabale




(Mr. V.B. Pujari)
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DEPARTMENT OF B. C. A.
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

Vivekanand College, Kolhapur (Autonomous)

Department of BCA

Academic Year: 2025-26

Teaching Plan

Name of the teacher: Ms. S.S. Kagale, Ms. V.R.Swami, Ms. A.S. Dalavi

Programme - BCA- I Semester I

Subject: **Problem Solving Techniques** Course Title:

Month			Module 1	Sub-units planned
Lectures	Practical's	Total	Understanding Basic Technologies of Computer and programming language	Problems And Problem Instances, Generalization and Special Cases, Types of Computational Problems, Classification of Problems, Analysis of Problems, Solution Approaches, Algorithm Development, Analysis of Algorithm, Efficiency, Correctness, Role of Data Structures in Problem Solving, Problem-Solving Steps (Understand the Problem, Plan, Execute, And Review), Breaking the Problem into Sub problems Input / Output Specification, Input Validation, Pre and Post Conditions.
Month			Module 2:	Sub-units planned
Lectures	Practical's	Total	Structured Programming Concepts & Introduction to C Language	Structured Programming Concepts: Sequence (Input/Output/Assignment), Selection (If, If-Else) And Repetition (For, While, Do-While) Statements, Control Structure Stacking and Nesting. Different Kinds of Repetitions : Entry Controlled, Exit Controlled, Counter Controlled, Definite, Indefinite and Sentinel-Controlled Repetitions. Pseudocode and Flowcharts. Definition And Characteristics of Algorithms, Standard Algorithm Format. Problems Involving Iteration and Nesting: Displaying Different Patterns and Shapes Using Symbols and Numbers, Generating Arithmetic and Geometric Progression, Fibonacci and Other Sequences,. Different Kinds of Data in The Real World and How They are Represented in The Computer Memory. Representation of Integers: Signed Magnitude Form, 1's Complement And 2's Complement. Representation of Real Numbers: IEEE 754 Floating Point Representation. Representation of Characters: ASCII, UNICODE. C Language : Introduction To Programming Languages, Different Generations of Programming Languages. Typed Vs Typeless Programming Languages, History of C Language ,An Empty C Program. C Language

				Counterparts For Input (scanf()), Output (printf()) Statements, Assignment, Arithmetic, Relational and Logical Operators. If, If-Else Statements, For, While, Do-While Statements. Data Types. Translating Pseudocode/Algorithm to C Program. Incremental Compilation and Testing of The C Program. Simple Problems Involving Input, Output, Assignment Statement, Selection and Repetition. Good Coding Practices.
Month			Module 3:	Sub-units planned
...				
			Translating algorithm to C program, program constructing	Problems on Numbers: Extracting Digits of a Number (Left to Right and Right to Left), Palindrome, Prime Number, Prime Factors, Amicable Number, Perfect Number, Armstrong Number, Factorial, Converting Number from One Base to Another. Statistics (Maximum, Minimum, Sum and Average) on a Sequence of Numbers which are Read using Sentinel- Controlled Repetition using only a few Variables. C Language: else-if Ladder, switch Case, Increment/Decrement Operators, break and continue Statements
Month			Module 4:	Sub-units planned
...				
			Array & Functions	Modular Programming, Top- Down and Bottom-Up Approaches to Problem Solving. Recursion. Problems on Arrays: Reading and Writing of Array Elements, Maximum, Minimum, Sum, Average, Median and Mode. Sequential And Binary Search. Anyone Sorting Algorithm. Matrix Operations. C Language: Function Definition and Declaration (Prototype), Role of Return Statement, One Dimensional and Two-Dimensional Arrays. String Functions. Other Operators, Operator Precedence and Associativity. Debugging

Ms. S.S. Kagale
Ms. V.R.Swami
Ms. A.S.Dalavi




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Annual Teaching Plan

Academic year: 2025-2026

Course Title: R programming (BCA-III Sem-VI)

Name of the teacher: Miss. V.R Swami, Miss. P.P. Misal, Miss. S.S.Kagale

Month : February			Module 1	Sub-Units Planned
Lecture	Practical	Total	Module I Introduction and Overview, Arrays	Introduction and Overview: Definition, Classification and Operations of Data Structures. Algorithms: Complexity, Time-Space Tradeoff. Arrays: Definition and Classification of Arrays, Representation of Linear Arrays in Memory, Operations on Linear Arrays: Traversing, Inserting, Deleting, Searching, Sorting and Merging. Searching: Linear Search and Binary Search, Comparison of Methods. Sorting: Bubble Sort, Selection Sort, and Insertion Sort. Two-Dimensional Arrays, Representation of TwoDimensional Arrays in Memory, Matrices and Sparse Matrices, Multi-Dimensional Arrays
16	16	32		
Month : March			Module 2	Sub-Units Planned
Lecture	Practical	Total	Linked Lists, Hashing and Collision	Linked Lists: Definition, Comparison with Arrays, Representation, Types of Linked lists, Traversing, Inserting, Deleting and Searching in Singly Linked List, Doubly Linked List and Circular Linked List. Applications of Linked Lists: Addition of Polynomials. Hashing and Collision: Hashing, Hash Tables, Types of Hash Functions, Collision, Collision Resolution with Open Addressing and Chaining.
16	16	32		
Month : April			Module 3	Sub-Units Planned
Lecture	Practical	Total	Stacks, Recursion, Queues	Stacks: Definition, Representation of Stacks using Arrays and Linked List, Operations on Stacks using Arrays and Linked List, Application of Stacks: Arithmetic Expressions, Polish Notation, Conversion of Infix Expression to Postfix Expression, Evaluation of Postfix Expression. Recursion: Definition, Recursive Notation, Runtime Stack, Applications of Recursion: Factorial of Number, GCD, Fibonacci Series and Towers of Hanoi. Queues: Definition, Representation of Queues using Array and Linked List, Types of Queue: Simple Queue, Circular
16	16	32		

				Queue, Double-Ended queue, Priority Queue, Operations on Simple Queues and Circular Queues using Array and Linked List, Applications of Queues.
Month : May			Module 4	Sub-Units Planned
Lecture	Practical	Total	Graphs	Graphs: Definition, Terminology, Representation, Traversal. Trees: Definition, Terminology, Binary Trees, Traversal of Binary Tree, Binary Search Tree, Inserting, Deleting and Searching in Binary Search Tree, Height Balanced Trees: AVL Trees, Insertion and Deletion in AVL Tree.
16	16	16		

Miss. V.R Swami
 Miss. P.P. Misal
 Miss. S.S.Kagale




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**Vivekanand College(An Empowered Autonomous Institute),
Kolhapur
Annual Teaching Plan**

Department : BCA

Academic Year : 2025-26

Term : II

Course Title: Mathematics Foundation to Computer Science - II (BCA-I Sem-II)

Name of the Teacher: Mr.Kedar Dattatray Morabale

Month : February - March			UNIT I	Sub Unit Planned
Lecture	Practical	Total		
14	0	14	Logic and Methods of Proofs	Propositions, logical operations (basic connectives), compound statements, construction of truth table, quantifiers, conditional statements, tautology, contradiction, contingency, logical equivalence. Conjunctive Normal Forms (CNF) and Disjunctive Normal Forms (DNF). Methods of proofs: Rules of inference for propositional logic, modus ponens, modus tollens, syllogism, proof by contradiction, Mathematical Induction.
Month : March			UNIT II	Sub Unit Planned
Lecture	Practical	Total		
8	0	8	Algebraic Structures	Semi-group, Monoid, Group, Subgroup, Cyclic group
Month : April			UNIT III	Sub Unit Planned
Lecture	Practical	Total		
14	0	14	Numerical Methods	Concept and importance of errors in numerical methods. Numerical Interpolation: Newton's Forward and Newton's Backward interpolation formula and Lagrange's formula. Numerical Integration: Trapezoidal rule and Simpson's 1/3 rule.
Month : April - May			UNIT IV	Sub Unit Planned
Lecture	Practical	Total		
12	0	12	Optimization Techniques	Linear programming: Introduction, LP formulation, Graphical method for solving LPs with two variables, Special cases in graphical methods, Simplex method, Duality.

				Transportation problem: Definition, Linear form, North-west corner method, Least cost method, Vogel's approximation method for finding feasible solution, MODI method for finding optimum solution.
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Mr. Kedar Dattatray Morabale



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Department of BCA

Academic Year: 2025-2026

Annual Teaching Plan

Name of the teacher: Mrs.M.B.Alman,Mrs.M.V.Kamble,Ms.R.D.Bavache

Programme: BCA-II Semester: III

Subject: Database Management Systems Course Title: MySQL (DSC04COM64)

Month-December			Module/Unit: 1	Sub-units planned
Lectures	Practicals	Total	Unit 1: Introduction to Databases Data Models Database Design	• Definition of Data. • Database, and DBMS. • Overview of Database Applications. • Advantages and Disadvantages of D • Roles of Database Users and Administrators. • Data Models: - Introduction to Data Models. - Types of Data Models (Hierarchical, Network,Relational ,Object-oriented) • Keys :Primary Key, Candidate Key, Super Key, Foreign Key, Composite Key, Alternate Key, Unique Key, Surrogate Key. • Constraints in a table: Primary Key, Foreign Key, Unique Key, NOT NULL, CHECK. • Entity-Relationship (ER) Model,Entities and Entity Sets,Attributes and Relationships,ER Diagrams,Key Constraints and Weak Entity Sets, Extended ER Features. Relational Model and Relational Schema.
16	24	40		
Month-January			Module/Unit: 2	Sub-units planned
Lectures	Practicals	Total	Unit 2: Relational Algebra and Calculus Structured Query Language (SQL) Advanced SQL Normalization and Database Design SQL Queries	• Introduction to Relational algebra. • SQL Basics: DDL and DML. - Aggregate Functions (Min(), Max(), Sum(), Avg(), Count()) - Logical operators (AND, OR, NOT). - Predicates (Like, Between, Alias, Distinct). - Clauses(Group By, Having, Order by, top/limit). - Join:Inner Join, Natural Join, Full Outer Join, Left Outer Join, Right outer Join, Equi Join .
16	24	40		
				- Analytical queries, Hierarchical queries, Recursive queries,

				Views, Cursors, Stored Procedures and Functions, Packages, Triggers, Dynamic SQL. • Functional Dependencies: Armstrong's Axioms, Definition. • Properties (Reflexivity, Augmentation, Transitivity). • Types (Trivial, Non-Trivial, Partial and Full Functional Dependency). Closure of Functional Dependencies, Normal Forms (1NF, 2NF, 3NF, BCNF). Denormalization
Month- February			Module/Unit: 3	Sub-units planned
16	24	40	Unit 3: • Transaction Management • Database Storage and Indexing	• ACID Properties, Transactions and Schedules, Concurrent Execution of Transactions, Lock-Based Concurrency Control, Performance of Locking, Transaction Support in SQL, Introduction to Crash Recovery, 2PL, Serializability, and Recoverability, Introduction to Lock Management, Dealing with Deadlocks • Data on External Storage, File Organizations and Indexing, Index Data Structures, Comparison of File Organizations, Indexes and Performance Tuning, Guidelines for Index Selection, Basic Examples of Index Selection.

Month- March			Module/Unit: 4	Sub-units planned
16	24	40	• NoSQL Databases and Big Data Database Security and Advanced Topics.	• Introduction to NoSQL, Data Models: Document, Key value, Column family, Graph. Uses and Features of NO/SQL document databases. CAP theorem, BASE vs ACID, CRUD operations, MongoDB operators • Overview of Big Data Technologies: Hadoop, MongoDB, Cassandra. Introduction to Database Security, Access Control, Discretionary Access Control, Introduction to Data Warehousing, OLAP, Data Mining.

Mrs. M.B.Alman

Mrs. M.V.Kamble

Ms. R.D.Bavache




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Department of BCA

Academic Year: 2025-2026

Annual Teaching Plan

Name of the teacher: Miss. P.P. Chougule

Programme: BCA-II

Semester: III

Subject: Descriptive Statistics

Course Title: Descriptive Statistics (DSC39COM31)

Month : July			Module/Unit: 1	Sub-Units Planned
Lecture	Practical	Total	1.1 Introduction of Statistics	1.1.1 Meaning of Statistics, primary and secondary data 1.1.2 Qualitative and Quantitative data, Discrete and Continuous variable. 1.1.3 Frequency and Frequency Distribution, Class interval, frequency, class frequency, class mark, open end classes 1.1.4 Frequency Distribution, Discrete and continuous frequency distribution, Cumulative Frequencies. 1.1.5 Graphical Representation: i) Median ii) Mode iii) Frequency Polygon iv) Frequency Curve 1.1.6 Numerical Examples
8	16	24		
Month : August			Module/Unit: 1	Sub-Units Planned
Lecture	Practical	Total	1.2 Measures of Central Tendency (Averages)	1.2.1 Concept of Central Tendency, Requirements of good average 1.2.2 Definition Arithmetic Mean, Properties of A.M. (without proof), combined mean, Median, Quartiles, Mode. Empirical relation between Mean, Median and Mode. 1.2.3 Merits and demerits of Mean, Median and Mode 1.2.4 Numerical Examples
8	16	24		
Month : September			Module/Unit: 1	Sub-Units Planned
Lecture	Practical	Total	1.3 Measures of Dispersion (Variability)	1.3.1 Concept of Dispersion, Requirements of good measures of dispersion, Absolute and Relative measures of dispersion. 1.3.2 Definitions of Range, Quartile Deviation (Q.D.), Mean Deviation (M.D.), Standard Deviation (S.D.), and Variance, Combined Variance and their relative measures, Coefficient of Variation (C.V.) 1.3.3 Merits and Demerits of Range, Q.D., M.D., S.D. 1.3.4 Numerical Examples
8	16	24		

Month : October			Module/Unit: 2	Sub-Units Planned
Lecture	Practical	Total	1.1 Correlation	1.1.1 Bivariate Random variable (X, Y), Bivariate data, Definition of Correlation and Types of Correlation. 1.1.2 Methods of studying correlation: Scatter diagram, Karl Pearson's correlation coefficient (r), Spearman's rank correlation coefficient (R), computation of R (with and without tie). 1.1.3 Properties of correlation coefficient (r) (Statements Only): (i) $-1 \leq r \leq 1$, interpretation of value of r, (ii) Effect of change of origin and scale.
4	8	12		
Month : November			Module/Unit: 2	Sub-Units Planned
Lecture	Practical	Total	1.2 Regression	1.2.1 Concept of regression. 1.2.2 Lines of regression, Fitting of lines of regression by the least square method (Without derivation). 1.2.3 Regression coefficients b_{xy} & b_{yx} , Properties of regression coefficients (Statements Only). 1.2.4 Numerical Examples
4	8	12		

Miss. P.P. Chougule



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Vivekanand College, Kolhapur
(Autonomous) Department of BCA
Academic Year: 2026-27

Teaching Plan

Academic Year: 2025-26

Programme : BCA-II Semester : III

Course Title: Feature Engineering

Name of the Teachers : Mrs. S.R.Hiremath

Month : July			Module I	Sub-Units Planned
Lecture	Practical	Total	Introduction to Feature Engineering	Introduction to Data and Features: Importance of Features in Machine Learning. Data types and features: Numerical, Categorical, Ordinal, Discrete, Continuous, Interval and Ratio.
2	4	6		
Month : August			Module I	Sub-Units Planned
Lecture	Practical	Total	Introduction to Feature Engineering	Basic Feature Preprocessing: Handling Missing Data, Data Cleaning, Feature Scaling, Normalization, and Transformation
2	4	6		
Month : September			Module II	Sub-Units Planned
Lecture	Practical	Total	Feature Engineering Techniques	Techniques for Numerical Data: Binning and Discretization, Polynomial and Interaction Features. Categorical Data Techniques: One Hot Encoding, Label Encoding
2	4	6		
Month : October			Module II	Sub-Units Planned
Lecture	Practical	Total	Feature Engineering Techniques	Feature extraction vs. feature selection, Steps in feature selection. Feature Selection Methods: Filter, Wrapper, and Hybrid. Feature Reduction: Introduction and application of Principal Components Analysis.
2	4	6		

Mrs. S.R.Hiremath




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Vivekanand College, Kolhapur
(Autonomous) Department of BCA
Academic Year: 2026-27

Teaching Plan

Academic Year: 2025-26

Programme : BCA-II **Semester :** III

Course Title: Software Engineering

Name of the Teachers : Mrs. S.R.Hiremath

Month : July			Module I	Sub-Units Planned
Lecture	Practical	Total		The evolving role of software, changing nature of software, layered technology, a process framework, Process models: The waterfall model, incremental process models, evolutionary process models, the unified process. Agile software development: Agility Principles, Agile methods, Plandriven and agile development, Extreme programming, Scrum, A Tool Set for the Agile Process.
4		4		
Month : August			Module II	Sub-Units Planned
Lecture	Practical	Total		Software Requirements Engineering: Functional and non-functional requirements, the software requirements document, Requirements specification, Requirements engineering processes, Requirements elicitation and analysis, Requirements validation, Requirements management. Risk management: Reactive Vs proactive risk strategies, software risks, risk identification, risk projection, risk refinement, RMMM, RMMM plan. Project planning- Software pricing, Plan-driven development, Project scheduling, Agile planning, Estimation techniques.
4		4		
Month : September			Module III	Sub-Units Planned
Lecture	Practical	Total		Design: Design process and design quality, design
4		4		

				concepts, the design model, software architecture, data design, architectural design, Basic structural modeling, class diagrams, sequence diagrams, collaboration diagrams, use case diagrams, component diagrams. Testing Strategies: A strategic approach to software testing, test strategies for conventional software, black-box and white-box testing, validation testing, system testing, the art of debugging. Product metrics: Software quality, metrics for analysis model, metrics for design model, metrics for source code, metrics for testing, metrics for maintenance.
Month : October			Module II	Sub-Units Planned
Lecture	Practical	Total		Quality Management: Quality concepts, software quality assurance, software reviews, formal technical reviews, statistical software quality assurance, software reliability. Release Management: Release planning, development and build plans, release strategies, risk management, and post-deployment monitoring. Product sustenance: Maintenance, updates, End of life, migration strategies.
4		4		

Mrs. S.R.Hiremath




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Vivekanand College, Kolhapur (Autonomous)

Department of BCA

Academic Year: 2025-26

Annual Teaching Plan

Name of the teacher:

Ms. A.P.Ulape, Ms. K.S.Dalvi, Ms. N.A.Bagwan

Programme: BCA-II

Semester: IV

Subject: Artificial Intelligence

Course Title: Artificial Intelligence (CC207)

Month : December			Module 1	Sub-Units Planned
Lecture	Practical	Total	Unit 1: Introduction to AI	Introduction to AI What is AI? Intelligent Agents: Agents and environment, the concept of Rationality, the nature of environment, the structure of Agents. Knowledge Based Agents: Introduction to Knowledge-Based Agents, The Wumpus World as an Example World. Problem-solving: Problem-solving agents.
4	8	12		
Month : January			Module 2	Sub-Units Planned
Lecture	Practical	Total	Unit 2: Advanced Search Techniques	Advanced Search Techniques Uninformed Search: DFS, BFS, Iterative Deepening Search. Informed Search: Best First Search, A* search, AO* search. Adversarial Search & Games: Two-player zero-sum games, Minimax Search, Alpha-Beta pruning. Constraints and Constraint Satisfaction Problems (CSPs), Backtracking search for CSP. Evolutionary Search Techniques: Introduction to evolutionary algorithms, Genetic algorithms, Applications of evolutionary search in AI.
4	8	12		
Month :February			Module 3	Sub-Units Planned
Lecture	Practical	Total	Unit 3: Logical Reasoning and Uncertainty	Logical Reasoning and Uncertainty Logic: Propositional logic, First-order predicate logic, Propositional versus first-order inference, Unification and lifting. Inference: Forward chaining, Backward chaining, Resolution, Truth maintenance systems. Introduction to Planning: Blocks World problem, Strips; Handling Uncertainties: Non-monotonic reasoning, Probabilistic reasoning, Introduction to Fuzzy set theory.
4	8	12		

Month : March			Module 4	Sub-Units Planned
Lecture	Practical	Total	Unit 4: Domains and Applications of AI	Domains and Applications of AI
4	8	12		Domains in AI: Introduction to Machine Learning, Computer Vision, Robotics, Natural Language Processing, Deep Neural Networks, and their Applications. Expert Systems: The architecture and role of expert systems include two case studies. Legal and Ethical Issues: Concerns related to AI.

Ms. A.P.Ulape
Ms. K.S.Dalvi
Ms. N.A.Bagwan



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Department of BCA

Academic Year: 2025-2026

Annual Teaching Plan

Name of the teacher: Miss. P.P. Chougule

Programme: BCA-II Semester: IV

Subject: Probability Distribution and Testing of Hypothesis Course Title: Probability Distribution and Testing of Hypothesis (DSC39COM41)

Month : December			Module/Unit: 1	Sub-Units Planned
Lecture	Practical	Total	1.1 Probability	1.1.1 Concepts of experiments and random experiments, Sample Space, Discrete sample space (finite and countably infinite) 1.1.2 Events, Types of events: Elementary event, Compound event, Impossible events, Certain event 1.1.3 Algebra of events: Mutually exclusive events, Exhaustive events, Complement of an event, Union, Intersection of two events. 1.1.4 Classical definition of Probability, Addition and Multiplication laws of Probability (without proof), Conditional probability. 1.1.5 Random variable, types of random variable, Definition of Probability mass function (p.m.f.) and Probability density function (p.d.f.), cumulative distribution function (c.d.f.) and its Properties, Mean, Median, Mode and Variance of Random Variable 1.1.6 Numerical Examples.
8	16	24		
Month : January			Module/Unit: 1	Sub-Units Planned
Lecture	Practical	Total	1.2 Binomial Distribution 1.3 Poisson Distribution 1.4 Normal Distribution	1.2.1 Probability mass function, Mean and Variance (without proof) 1.2.2 Recurrence relation for successive probabilities. 1.2.3 Simple numerical problems to find probability and parameters. 1.3.1 Probability mass function, Mean and Variance (without proof) 1.3.2 Recurrence relation for successive probabilities. 1.3.3 Simple numerical problems to find probability and parameters.
8	16	24		

				1.4.1 Probability density function, Mean and Variance (without proof) 1.4.2 Properties of Normal Curve, Standard normal distribution 1.4.3 Numerical problems to find probabilities for given area under standard normal curve.
Month : February			Module/Unit: 2	Sub-Units Planned
Lecture	Practical	Total	2.1 Hypothesis	2.1.1 Concept of Population and Sample, Parameter and Statistic. 2.1.2 Hypothesis, Null and alternative hypothesis, Simple and composite hypothesis, One and two tailed test, type I and type II errors, power of test.
8	16	24		
Month : March			Module/Unit: 2	Sub-Units Planned
Lecture	Practical	Total	2.2 Large Sample Tests for Means: 2.3 Small Sample Tests for Means:	2.2.1 Testing of population mean; $H_0: \mu = \mu_0$ 2.2.2 Testing equality of two population means; $H_0: \mu_1 = \mu_2$ 2.3.1 T Test: (i) Testing of population mean; $H_0: \mu = \mu_0$ (ii) Testing of equality of two population means; $H_0: \mu_1 = \mu_2$ (iii) Paired t test. 2.3.2 Chi square test: (i) independence of attributes (ii) goodness of fit.
8	16	24		

Miss. P.P. Chougule



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Teaching Plan

Academic Year:2025-26				
Course Title: Design and Analysis of Algorithms (BCA-II Sem-IV)				
Name of the Teachers : Mrs. S.R.Hiremath, Mr.M.M.Patil, Mrs.M.S.Kakade				
Month : December			Module I	Sub-Units Planned
Lecture	Practical	Total		What is an algorithm? Design and performance analysis of algorithms, time complexity, space complexity. Asymptotic notations (O, Ω, Θ) to measure growth of a function and application to measure complexity of algorithms. Analysis of sequential search, bubble sort, selection sort, insertion sort, matrix multiplication. Recursion: Basic concept. Analysis of recursive algorithms, Master's theorem.
4		4		
Month : January			Module II	Sub-Units Planned
Lecture	Practical	Total	The Divide & Conquer Design Technique:	The Divide & Conquer Design Technique: The general concept. Binary search, finding the maximum and minimum, merge sort, quick sort. Best and worst case analysis for the mentioned algorithms. Strassen's matrix multiplication. Lower bound for comparison-based sorting. The Greedy Design Technique: The general concept. Applications to general Knapsack problem, finding minimum weight spanning trees: Prim's and Kruskal's algorithms, Dijkstra's algorithm for finding single source shortest paths problem.
4		4		
Month :February			Module III	Sub-Units Planned
Lecture	Practical	Total	The Dynamic Programming Design Technique:	The Dynamic Programming Design Technique: The general concept. Computation of Fibonacci series and Binomial coefficients, all pair shortest paths problem (Floyd-Warshall's algorithm), 0/1 Knapsack problem. Algorithms on Graphs: Breadth First Search, Depth First Search, finding connected components, depth first search of a directed graph, topological sorting.
4		4		
Month : March			Module IV	Sub-Units Planned
Lecture	Practical	Total	Limitations of Algorithmic Power:	Limitations of Algorithmic Power: Backtracking Method: n-Queen problem; sum of subsets problem/ Hamiltonian circuit problem/vertex cover problem. Computational Intractability: Overview of non-deterministic algorithms, P, NP, NP-Complete and NP-hard problems.
4		4		

Mrs. S.R.Hiremath

Mr.M.M.Patil
Mrs.M.S.Kakade




 (Mr. V.B. Pujari)
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 DEPARTMENT OF B. C. A.
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Vivekanand College, Kolhapur (An Empowered Autonomous Institute)

Department of Computer Application

Academic year: 2025-2026

Annual Teaching Plan

Name of the teacher: Miss. K.V Bagal, Mrs.S.R.Hiremath, Miss.A.P.Ulape, Miss.A.N.Salokhe

Programme: BCA-III

Semester: V

Subject: ASP.NET with C#

Course Title: ASP.NET with C# (DSC04COM51)

Month : July			Module 1	Sub-Units Planned
Lecture	Practical	Total	Introduction to .Net	Introduction to .Net Introduction to .Net: An Overview of C#, History and Features of C#, .NET Framework Architecture, IDE (Integrated Development Environment), Components of NET: CLR, CLS, Microsoft Intermediate Language ("MSIL" or "IL"), The Common Type System (CTS), Data Types, Value and Reference Types, C#-Flow Control: Branching and Looping. Type casting, Boxing and Unboxing, JIT compiler and it's types, DLL and EXE.
16	16	32		
Month : August			Module 2	Sub-Units Planned
Lecture	Practical	Total	Object Oriented Concepts	Object Oriented Concepts Object Oriented Concepts: Classes and Objects, Command Line Arguments. Polymorphism, Inheritance and it's types- Single, Multiple, Multilevel, Hierarchical, Parameter Passing Mechanism 'val' and 'ref', Abstract Classes, Sealed Classes, Partial Classes, Exception Handling.
16	16	32		
Month : September			Module 3	Sub-Units Planned
Lecture	Practical	Total	Introduction to ASP.NET	Introduction to ASP.NET Introduction to Scripting Languages, ASP.NET Introduction, Features of ASP.NET, Web browser and web server, HTTP request response structure, HTML form elements, GET/POST method, Client side and Server side programming, Web form life cycle, Page events, Server Controls: Textbox, List controls, File Upload, Link button, Image map, Image, Image button, Calendar, Literal control, Radio button, Checkbox, Validation Controls, Navigation controls, Master Page.
16	16	32		

Month : October			Module 4	Sub-Units Planned
Lecture	Practical	Total	State Management and Database Connectivity	State Management and Database Connectivity State Management: Cross page post back property of button, Response. Redirect, Server. Transfer, Response. Write. State Management - Session, Application, Global. Sax, Caching. Database Connectivity: SqlServer Database, Data controls- Grid view, List view, Form View, Details View, Repeater, Introduction to ADO.Net, ADO.NET Architecture-Connection, command, data reader, data adapter, data set, Understanding connected layer of ADO.NET and disconnected layer of ADO.NET
16	16	32		

Miss. K.V Bagal

Mrs.S.R.Hiremath

Miss.A.P.Ulape

Miss.A.N.Salokhe




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Department of BCA

Academic year: 2025-2026

Annual Teaching Plan

Name of the teacher: Miss. K.V Bagal, Mrs.M.V.Kamble, Mrs.M.M.Kakade

Programme: BCA-II

Semester: IV

Subject: Computer Networks

Course Title: Computer Networks ()

Month : December			Module 1	Sub-Units Planned
Lecture	Practical	Total	Introduction to Computer Networks	Introduction to Computer Networks Overview of Computer Networks: Definition and Objectives, Applications and Examples Network Components and Architecture Network Models: OSI Model: Layers and Functions, TCP/IP Model: Layers and Functions Comparison between OSI and TCP/IP Models Network Topologies: Physical vs. Logical Topologies, Common Topologies: Star, Ring, Bus, Mesh, Hybrid, Advantages and Disadvantages of Each Topology Data Transmission: Analog vs. Digital Signals, Transmission Modes: Simplex, Half-Duplex, Full-Duplex, Bandwidth and Latency Networking Devices: Routers, Switches,Hubs, Bridges, Gateways,Functions and Configurations of Each Device.
16	16	32		
Month : January			Module 2	Sub-Units Planned
Lecture	Practical	Total	Data Link Layer and Networking Protocols	Data Link Layer and Networking Protocols Data Link Layer Fundamentals: Functions of the Data Link Layer, Framing, Error Detection, and Error Correction, Flow Control Mechanisms. Ethernet: Ethernet Standards and Frame Structure, MAC Addressing and ARP, Ethernet Switching: Basic Concepts and Methods Network Protocols: Introduction to TCP/IP Protocol Suite, IP Addressing: IPv4 and IPv6 Subnetting and CIDR Notation Address Resolution Protocol (ARP): ARP Operation and Table, ARP Spoofing and Security Consideration Virtual LANs (VLANs): Concept of VLANs, VLAN Tagging and Configuration, Benefits and Use Cases
16	16	32		

Month : February			Module 3	Sub-Units Planned
Lecture	Practical	Total	Network Layer and Transport Layer	Network Layer: IP Routing: Static vs. Dynamic Routing, Routing Protocols: RIP, OSPF, BGP, Network Address Translation (NAT) Transport Layer: TCP vs. UDP: Characteristics and Use Cases, TCP Handshake and Connection Management, Flow Control and Congestion Control in TCP Congestion Control Algorithms: Techniques: Slow Start, Congestion Avoidance, Fast Retransmit, Fast Recovery, TCP Variants: TCP Reno, TCP Vegas. Quality of Service (QoS): QoS Principles and Mechanisms, Differentiated Services (DiffServ) and Integrated Services (IntServ).
16	16	32		
Month : March			Module 4	Sub-Units Planned
Lecture	Practical	Total	Application Layer and Emerging Technologies Application Layer Protocols:	Application Layer and Emerging Technologies Application Layer Protocols: HTTP/HTTPS: Structure and Operation, FTP, SMTP, POP3, IMAP: Protocols and Uses, DNS: Domain Name System and Resolution Network Applications: Web Browsing, Email Communication, File Transfer, Voice over IP (VoIP) and Streaming. Emerging Technologies: Software-Defined Networking (SDN), Network Function Virtualization (NFV), Internet of Things (IoT) and Its Impact on Networking Network Management: SNMP: Simple Network Management Protocol, Network Monitoring Tools and Techniques. Future Trends in Networking: 5G and Beyond, Network Automation and Artificial Intelligence in Networking.
16	16	32		

Miss. K.V Bagal
Mrs.M.V.Kamble
Mrs.M.M.Kakade



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Department of BCA

Academic Year: 2025-2026

Annual Teaching Plan

Name of the teacher::Ms.R.D.Bavache

Programme: BCA-III

Semester: V

Subject:Software Project Management

Course Title: Software Project Management (DSC04COM54)

Academic year:2025-2026				
Course Title: Software Project Management (BCA-III Sem-V)				
Name of the teacher: Miss. R.D.Bavache.				
Month : July			Module 1	Sub-Units Planned
Lecture	Practical	Total	Software Development Process and Models	Introduction to Software Development Process: Defining software development, tailoring processes, and improving process discipline. Software Production Process: Understanding the need for process discipline in software development. Software Models: Waterfall Model, Prototyping Model, RAD Model, Incremental Model, Spiral Model, Component Assembly Model. Software Life Cycle: Overview of the stages and phases in the software development life cycle.
8	0	8		
Month : August			Module 2	Sub-Units Planned
Lecture	Practical	Total	Software Development and Project Management Software	Development Team: Roles and structure of the team, leadership and communication. Project Management: Top-Down and Bottom-Up Planning, Activity types, Project duration, and Schedule Monitoring Tools (Gantt Chart, PERT Chart, Critical Path Method).
8	0	8		
Month :September			Module 3	Sub-Units Planned
Lecture	Practical	Total	Project Review, Engineering, and Problem	Project Review and Tracking: Importance of recovery plans, tracking meetings, and
8	0	8		

			Solving	escalation meetings. Project Engineering: Product requirements, understanding customer needs, and investigation strategies. Problem Solving Techniques: Data Flow Diagrams, Data Dictionary, Structured English, Decision Trees, Decision Tables, Feasibility Study.
Month : October			Module 4	Sub-Units Planned
Lecture	Practical	Total	Software Testing and Quality Assurance Software Testing	Software Testing and Quality Assurance Software Testing: Test Plan, Verification & Validation, General Testing Methods (White Box, Black Box), Unit Testing, System Integration, and Validation Testing. Software Quality: Quality measures (FURPS), Software Quality Assurance (SQA), Reviews (FTR), and formal approaches like Clean
8	0	8		

Ms. R.D.Bavache



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Annual Teaching Plan

Academic year:2025-2026

Course Title: Python Programming (BCA-III Sem-V)

Name of the teacher: Miss. V.R Swami, Miss. P.P. Misal, Miss. S.S. Kagale

Month : June			Module 1	Sub-Units Planned
Lecture	Practical	Total	INTRODUCTION TO PYTHON	Installation, Spyder IDE, Python Interpreter, History Of Python, Python Features, Applications Of Python, Data Types, Types Of Operators, Operators Precedence, Expressions, Statements, Functions, Comment, Strings - Accessing Values In Strings, Updating Strings, Escape Characters, Built-In String Methods, User Input
15	0	15		
Month : July			Module 2	Sub-Units Planned
Lecture	Practical	Total	CONTROL FLOW AND LOOPS	Conditionals: Boolean Values And Operators, Conditional (If), Alternative (If-Else) ,Chained Conditional (If-Elif-Else) Looping-While Loop, The Infinite Loop, For Loop, Iterating By Sequence Index, Using Else Statement With Loops, Nested Loops, Break, Continue & Pass Statement. Functions: Function With Arguments, Lambda Functions
15	0	15		
Month : August			Module 3	Sub-Units Planned
Lecture	Practical	Total	LISTS, TUPLES, DICTIONARIES AND SET	Lists-Create a List, Get and Set Items ,Add and Remove Items, List Slices, Different List Methods TUPLES - Creation and Accessing Values, Updating Tuples, Deleting Tuple Elements, Basic Tuples Operations, Indexing, Slicing DICTIONARY- Accessing Values in Dictionary, Updating Dictionary, Delete Dictionary Elements, Properties of Dictionary Keys, Built In Dictionary Functions and Methods. SETS -Concept of Sets, Creating, Initializing and Accessing the Elements, Sets Operation.
15	0	15		

Month : September			Module 4	Sub-Units Planned
Lecture	Practical	Total	MODULES, FILES I/O,GUI	The Import Statement, Modules (Date time, Calendar, Math Module) Files I/O: Text Files, Reading And Writing Files Introduction To GUI In Python
15	0	15		

Miss. V.R Swami
Miss. P.P. Misal
Miss. S.S. Kagale




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Department of Computer Application

Academic year: 2025-2026

Annual Teaching Plan

Name of the teacher: Miss. K.V Bagal, Mrs.M.V.Kamble, Miss.N.A.Bagawan, Mr.H.R.Chitrakar

Programme: BCA-III

Semester: V

Subject: Basic Linux

Course Title: Basic Linux (DSC04COM53)

Month : July			Module 1	Sub-Units Planned
Lecture	Practical	Total	Introduction to Linux, File System and System Calls	I Introduction to Linux, File System and System Calls Introduction to Linux: Operating System Basics, History of Linux, Architecture of Linux, Operating System Services, Shell, Types of Shell, Kernel, Login and Logout, General Purpose Utilities (banner, cal, date, calendar, who, tty, uname, password, lock, echo, tput, bc, clear, script, we, echo, test, expr), Finding Information of commands. File System: File system terminology, A Hierarchical file system, Boot block, Super block, I node table, Storage and Accessibility of files, File and Directory Manipulation commands (pwd, cd, ls, mv, cp, rm, mkdir, rmdir, cat) File ownership and permission, File system commands, File locating command (find), File permissions. System Calls: Open, Read, Write, Close
16	16	32		
Month : August			Module 2	Sub-Units Planned
Lecture	Practical	Total	Process and BASH Shell Scripting	Process and BASH Shell Scripting BASH Shell Scripting: Introduction of Shell Scripts, Variable and Invoking the Shell Variables, Operators (Arithmetic, Relational, Logical, Assignment, Reassignment), Special Variables (S*, S@, \$1-\$9, S?, S!, SS, S-), Control Statement-Conditional, Selection statements, Looping statements.
16	16	32		
Month : September			Module 3	Sub-Units Planned
Lecture	Practical	Total	Memory Management, NANO Editor and Regular Expressions	Memory Management, NANO Editor and Regular Expressions Memory Management: Swapping, Demand Paging, Paging, and Segmentation. NANO Editor: Installing the Nano Text Editor in Linux, Nano Command Keys, Create a New File using Nano, Open an Existing File Using Nano, Edit Files Using Nano Text Editor in Linux, Cut and Paste Lines of Text Using Nano, Valid Shortcuts in Nano
16	16	32		

				Text Editor, Search Text Using Nano, Spell Check Using Nano, Save Your Work Using Nano, Save with Backups. Regular Expressions: Met characters, Controlling Repeated Characters through, +, and?, Using and Modifying the. Met character, Controlling Where a Pattern Matches, Matching from a List of Options, Matching Characters That Must Not Appear, Matching Met characters Literally, Controlling Repetition, Selecting between Sequences
Month : October			Module 4	Sub-Units Planned
Lecture	Practical	Total	Filters and Advanced BASH Shell	Filters and Advanced BASH Shell Programming Filters: cat, tac, head, tail filters and options, sed and sed options, grep and grep options, Line Addressing, Multiple Instruction(-E and -F), Context Addressing, Writing Selected Lines to a File. Advanced BASH Shell Programming: Seq Command for sequence, Shell and subshell, Exporting Shell Variables, Arrays, String Manipulation, Shell Functions.
16	16	32		

Miss. K.V Bagal
Mrs.M.V.Kamble
Miss.N.A.Bagawan
Mr.H.R.Chitrakar



(Mr.V.B.Pujari)
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Vivekanand College, Kolhapur (An Empowered Autonomous Institute)

Department of BCA

Academic Year: 2025-2026

Annual Teaching Plan

Name of the teacher: Ms.P.P.Deshmukh, Ms.A.S.dalavi,Ms.R.D.Bavache,Ms.V.A.Kotamire

Programme: BCA-III Semester: VI

Subject: MySQL Course Title: MySQL (DSC04COM64)

Month-December			Module/Unit: 1	Sub-units planned
Lectures	Practicals	Total	Introduction to Databases and MySQL Introduction to Databases, Relational Model and MySQL overview. Introduction to MySQL, Basic MySQL Operations	Introduction to Databases and MySQL Introduction to Databases: What is a database? Types of databases (Hierarchical, Network, Relational). DBMS: Definition, components, and advantages. Relational Model and MySQL overview. Introduction to MySQL: What is MySQL? Features and benefits of MySQL as an RDBMS. Installation of MySQL on different platforms. Overview of MySQL Workbench and Command Line Interface (CLI). Basic MySQL Operations: Creating databases, tables, inserting, and updating data.
2	8	10		
Month-January			Module/Unit: 2	Sub-units planned
Lectures	Practicals	Total	SQL Basics and Data Types SQL Overview, SQL Data Types, Basic SQL Queries	SQL Basics and Data Types SQL Overview: Introduction to SQL (Structured Query Language). Types of SQL statements: DDL, DML, DCL, TCL. SQL Data Types: Numeric: INT, FLOAT, DOUBLE, DECIMAL. String: CHAR, VARCHAR, TEXT, BLOB. Date/Time: DATE, DATETIME, TIME, TIMESTAMP. Other: BOOLEAN, ENUM, JSON. Basic SQL Queries: SELECT, INSERT, UPDATE, DELETE statements with example
2	8	10		
Month- February			Module/Unit: 3	Sub-units planned
2	8	10	Database Design, Keys, and Constraints Database Design, Keys and Constraints, Relationships and Integrity	Database Design, Keys, and Constraints Database Design: Normalization: First, Second, and Third Normal Forms (1NF, 2NF, 3NF). ER (Entity-Relationship) diagrams: Basics and designing simple relationships. Keys and Constraints: Primary Key, Foreign Key, Unique Key, Composite Key.

				NOT NULL, UNIQUE, DEFAULT, and CHECK constraints. Relationships and Integrity: One-to-One, One-to-Many, Many-to-Many relationships. Referential Integrity and enforcing foreign key constraints.
Month- March			Module/Unit: 4	Sub-units planned
2	8	10	Advanced SQL Queries and MySQL Administration Advanced SQL Queries, Transactions and Concurrency, MySQL Administration.	Advanced SQL Queries and MySQL Administration Advanced SQL Queries: Joins: INNER JOIN, LEFT JOIN, RIGHT JOIN, FULL JOIN.Subqueries: Nested SELECT, correlated subqueries.Grouping and Aggregation: GROUP BY, HAVING, COUNT, SUM, AVG, MIN, MAX.Sorting and Filtering: ORDER BY, LIKE, IN, BETWEEN, and logical operators. Transactions and Concurrency: Transaction Control: COMMIT, ROLLBACK, SAVE POINT.Handling concurrency with ACID properties. MySQL Administration: User management: Creating users, granting and revoking permissions.Backup and restore: Using mysqldump for backup and restore.

Ms. V.A.Kotamire

Ms. R.D.Bavache

Ms. P.P.Deshmukh

Ms. **A.S.Dalavi**




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Vivekanand College, Kolhapur (Autonomous)

Department of BCA

Academic Year: 2025-26

Annual Teaching Plan

Name of the teacher:

Mrs.S.R.Hiremath, Ms. A.P.Ulape,Ms. R.D.Bavache,Ms. K.S.Dalvi

Programme: BCA-III

Semester: VI

Subject: Java Programming Course Title: Java Programming(DSC04COM61)

Month : December			Module 1	Sub-Units Planned
Lecture	Practical	Total	Introduction to Java and Object Oriented Programming (A)Introduction to Java:	(A)Introduction to Java: History of Java and features of Java, Primitive Data Types- Integer (byte, short, int, long), floating point (float, double), char, boolean, Non-Primitive Data Type – String, Java Keywords, variables, constants, Operators- arithmetic, relational, logical, unary, ternary, bitwise, Branching and looping statements, Typecasting- Implicit and Explicit, wrapper classes, Command line arguments, Writing simple java program, compiling and executing Java program (javac, java commands).
8	16	24		
Month : January			Module 1	Sub-Units Planned
Lecture	Practical	Total	Introduction to Java and Object Oriented Programming (B)Object Oriented Programming using Java:	(B)Object Oriented Programming using Java: Introduction- Class, Object and methods, Access modifiers and accessibility, Static members, constructors, destructor and this keyword, Encapsulation and Abstraction, Inheritance- Definition and its types single, multilevel, hierarchical, Interface – definition and implementation, Abstract Class – definition and use, Polymorphism- Definition and concepts of method overloading and overriding, Final method and Final Class, Java Packages – introduction, defining packages, CLASSPATH, importing packages, System Packages – java, lang, awt, javax, swing, net, io, util.
8	16	24		
Month :February			Module 2	Sub-Units Planned
Lecture	Practical	Total	Multithreading, Exception Handling, GUI Programming and Event Handling (A)Multithreading and Exception Handling:	(A)Multithreading and Exception Handling: Introduction to Multithreading, Understanding Threads, Thread Life-Cycle, Creating threads using Thread class & Runnable Interface, Thread Priorities, Exception handling - Fundamentals of exception handling, Exception types, Using try and catch, multiple catch clauses, throw, throws and finally, Built- in exceptions, Creating own
8	16	24		

				exception sub classes.
Month : March			Module 2	Sub-Units Planned
Lecture	Practical	Total	Multithreading, Exception Handling, GUI Programming and Event Handling	(B)GUI Programming and Event Handling:
8	16	24	(B)GUI Programming and Event Handling:	Introduction to GUI, Abstract Window Toolkit (AWT), Component and Container, Using Containers - Frame and Panel, Layout Managers - Flow Layout, Grid Layout, Card Layout, Border Layout, AWT Components – Label, Button, Text Field, Checkbox, Checkbox Group, Event Handling- The Delegation event model, Events, Event sources, Event Listeners, Event classes, Handling mouse and keyboard events, Adapter classes, Inner classes, Anonymous Inner classes.

Mrs.S.R.Hiremath

Ms. A.P.Ulape

Ms. R.D.Bavache

Ms. K.S.Dalvi




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Department of Computer Application

Academic year: 2025-2026

Annual Teaching Plan

Name of the teacher: Miss. K.V Bagal, Mrs.M.V.Kamble, Miss.N.A.Bagawan, Mr.M.M.Patil

Programme: BCA-III

Semester: VI

Subject: Computer Networking

Course Title: Computer Networking (DSC04COM63)

Month : December			Module 1	Sub-Units Planned
Lecture	Practical	Total	Basics of Data communication	Basics of Data communication 1.1. Data Communication concept 1.1.1 Components-sender, receiver, message, transmission media 1.1.2 Data Flow- simplex, half-duplex, or full-duplex 1.2 Networks 1.2.1 Definition, Advantages and disadvantages 1.2.2 Categories of Networks- LAN, WAN. MAN 1.2.3 Network Architecture-Client-Server and Peer to peer 1.3 Multiplexing and switching 1.3.1 Frequency-Division Multiplexing, WavelengthDivision Multiplexing, Time-Division Multiplexing 1.3.2 Circuit switching, Packet Switching, Message Switching
8	16	24		
Month : January			Module 2	Sub-Units Planned
Lecture	Practical	Total	Transmission media and Reference Models	Transmission media and Reference Models 2.1 Transmission Media 2.1.1 Guided Media - Twisted-Pair Cable, Coaxial Cable, Fiber-Optic Cable 2.1.2 Unguided Media: Radio Waves, Microwaves, Infrared, satellite communication 2.2 Transmission Modes- Parallel and Serial - (Asynchronous, Synchronous) 2.3 Reference Models 15 2.3.1 OSI reference model 2.3.2 TCP/IP reference model 2.3.3 Comparison of OSI and TCP/IP reference model 2.4 Protocol Standards 2.5 IP address scheme and characteristics of IP address
8	16	24		
Month : February			Module 3	Sub-Units Planned
Lecture	Practical	Total	Data link, Network and Transport layer	Data link, Network and Transport layer 3.1 Data link Layer- 3.1.1Design issues 3.1.2 Framing, error detection and correction 3.2 Network layer 3.2. 1 design issues of network layer 3.2.2 Routing algorithm (shortest path, Flooding, distance vector,) 3.2.3 Congestion control 3.3 Transport layer 3.3.1 Transport Layer Primitives: listen, connect, send, receive, disconnect 3.3.2 Protocols: TCP, UDP
8	16	24		

Month : March			Module 4	Sub-Units Planned
Lecture	Practical	Total	Session, Presentation and Application layer	Session, Presentation and Application layer 4.1 Session layer: 4.1.1 Services: dialog management, synchronization, activity management, exception handling 4.1.2 Remote procedure calls 4.2 Presentation layer: 4.2.1 Services: Translation, compression, encryption 4.2.2 Cryptography: concept, symmetric key & asymmetric key cryptography 4.3 Application layer: 4.3.1 Function 4.3.2 Domain name system (DNS), Hypertext Transfer Protocol (HTTP), Simple Mail Transfer Protocol (SMTP), Telnet, File Transfer Protocol (FTP)
8	16	24		

Miss. K.V Bagal
Mrs.M.V.Kamble
Miss.N.A.Bagawan
Mr.M.M.Patil



(Mr. V. B. Pujari)
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Annual Teaching Plan

Name of the teacher:: Ms. R.D.Bavache, Smt. M.P.Kamble

Programme: BCA-III

Semester: VI

Subject: Data Warehousing And Data Mining

Course Title: Data Warehousing And Data Mining
(DSC04COM62)

Academic year:2025-2026				
Course Title: Data Warehousing And Data Mining (BCA-III Sem-VI)				
Name of the Teacher: Ms. R.D.Bavache, Smt. M.P.Kamble				
Month : December			Module 1	Sub-Units Planned
Lecture	Practical	Total	Introduction to data warehousing, Data warehouse architecture	Data Warehousing: Introduction to data warehousing, Data warehousing components, Building a data warehouse, Difference between database system and data warehouse, Data warehouse architecture
8	0	8		
Month : January			Module 2	Sub-Units Planned
Lecture	Practical	Total	Introduction of data mining, KDD process, Discretization and concept hierarchy generation, Data mining Tasks	Data Mining: Introduction of data mining - Definition and functionalities Issues in DM, Applications of data mining, KDD process. Data Pre-processing: Data Pre-processing, Data cleaning, Data integration and transformation, Data reduction, Discretization and concept hierarchy generation, Data mining Tasks
8	0	8		
Month :February			Module 2	Sub-Units Planned
Lecture	Practical	Total	Data Mining techniques, Bayesian Classification, Classification by Decision Tree Introduction	Data Mining techniques: Frequent item - set and association rule mining: apriori algorithm, use of sampling for frequent item- set tree algorithm, Graph sampling : frequent sub graph mining , tree mining ,sequence mining Classification and Prediction - Issues Regarding Classification and Prediction – Classification by Decision Tree Introduction – Bayesian Classification – Rule Based Classification –Prediction – Accuracy and Error Measures.
8	0	8		
Month : March			Module 2	Sub-Units Planned
Lecture	Practical	Total	Cluster Analysis, Clustering Methods, Partitioning Methods – K-Means and K-Medoids	Cluster Analysis: Types of Data in Cluster Analysis, A Categorization of Major Clustering Methods, Partitioning Methods – K-Means and K-Medoids
8	0	8		

Ms. R.D.Bavache
Smt. M.P. Kamble




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