MCA DEPARTMENT

Teaching Plan

A. Y. 2024-25

Name of Teacher: Mr.Vijay B. Pujari
Course Title: Data Structure Using C++

Class: MCA
Sem: I

Month: October			**Module/ Unit**	**Sub-units Planned**
Lect.	**Pract.**	**Total**		
12	04	16	**UNIT 1** **INTRODUCTION TO DATA STRUCTURES**	Introduction and meaning of data structure, Linked list-concept of singly, doubly and circular linked list, operations on linked list -Adding and removing nodes, Array implementation of lists, Limitation of the Array.
Month: November			**Module/ Unit**	**Sub-units Planned**
Lect.	**Pract.**	**Total**		
12	04	16	**Unit 2** **STACK & QUEUES**	STACKS -Definition and Example of stack, Implementation Of Stacks As An Array And Linked List, Operations on stacks, stack stored as a linked list arithmetic expression, converting an expression from Infix To Postfix. QUEUES - Definition And Examples Of Queues, Queues As An Abstract Data Type, Queues Stored As A Linked List, Circular Queue, Implementation Of Queues As An Array And Linked List, Operations On Queues, Priority Queue & Dequeue.structure,

Month: December			Module/ Unit	Sub-units Planned
Lect.	**Pract.**	**Total**		
12	04	16	**Unit 3** **TREES & GRAPHS**	Trees, General tree, Binary tree, binary search tree, operations on binary search tree, AVL Trees, Single rotation, Double rotation, Red-Black Trees, B-Trees: Definition of B-trees, Basic operations on B-trees, deleting a key from a B-tree. Graphs: Representations of graph, Traversing Graphs, Breadth-first search, Depth-First Search, topological sort, Minimum Spanning trees, Single source shortest path, All pairs shortest path
Month: January			**Module/ Unit**	**Sub-units Planned**
Lect.	**Pract.**	**Total**		
12	04	16	**UNIT 4** **RECURSION**	Recursive Definition and Process, Factorial Function, Multiplication of Natural Numbers, Fibonacci Sequence, Properties of Recursive Definitions, Writing Recursive Programs (The Tower of Hanoi Problem, Converting Prefix to Postfix Using Recursion), Simulating Recursion (Return from A Function, Implementing Recursive Function, Simulation of Factorial)

Subject Teacher
(Mr. V. B. Pujari)

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

Head
(Mr. V. B. Pujari)

MCA DEPARTMENT

Teaching Plan

A. Y. 2024-25

Name of Teacher: Dr.A.B.Chougule
Course Title: Database Management System

Class: MCA
Sem: I

Month: October			**Module/ Unit**	**Sub-units Planned**
Lect.	**Pract.**	**Total**		
12	04	16	**Unit 1** **Database concept**	Introduction, Data, Information Metadata, Terminology Of File, Association Between Fields, Entities And Their Attributes, Relationship Record And Files, Abstraction And Data Integration, Association Between Files (Record Types), Conventional File Processing System, Database System, Components Of Database Management System – (Classification Of DBMS Users, The Tree-Level Architecture, Mapping Between View, Data Independence.)
Month: November			**Module/ Unit**	**Sub-units Planned**
Lect.	**Pract.**	**Total**		
12	04	16	**Unit 2** **Data Models**	Introduction, Data Association-(Entities, Attributes And Associations, Relationship Among Entities, Representation Of Association And Relationship), Concept Of File Organization – Sequential Files, Index-Sequential Files, Direct Files. Relational Algebra: Basic Operations, Relational Algebra Queries, Relational Calculus: Tuple Calculus,

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

				Domain Calculus.-meaning, Process, Organization structure, Types of organizational structure, Centralization and Decentralization, Departmentalization, Span of management, Concept of Authority, Responsibility and Accountability, Delegation.
Month: December			**Module/ Unit**	**Sub-units Planned**
Lect.	**Pract.**	**Total**		
12	04	16	**Unit 3** **Introduction to RDBMS**	Entity introduction, characteristics, Comparison between DBMS, RDBMS, Generalization and Aggregation Normalization- Functional dependency, types of normalization (1NF,2NF,3NF, BCNF), Data constraint- primary key, foreign key, unique key, null, not null, default key etc.
Month: January			**Module/ Unit**	**Sub-units Planned**
Lect.	**Pract.**	**Total**		
12	04	16	**Concurrency Control and Transaction Management**	Transaction processing Concurrency - Concept of transaction processing, ACID properties, States of transaction, Serializability, Concurrency control, schemes , Locking techniques , Timestamp based protocols , Granularity of data items ,Deadlocks. Database recovery and Backup

Subject Teacher
(Ms.A.B.Chougule)

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

Head,
(Mr. V. B. Pujari)

MCA DEPARTMENT

Teaching Plan

A. Y. 2024-25

Name of Teacher: Dr.A.B.Chougule
Course Title: Computer Networks

Class: MCA
Sem: I

Month: October			**Module/ Unit**	**Sub-units Planned**
Lect.	**Pract.**	**Total**		
15	NA	15	**Unit 1** **Introduction to Computer Networks and Physical Layer**	Networking Devices, Classification of Compu Networks, Network Protocol Stack (TCP/IP and IS OSI), Network Standardization and Examples Networks. Data Transmission Concepts, Analog a Digital Data Transmission, Communication mec Digital modulation techniques (FDMA, TDM CDMA), components of computer networks-fi server, workstation, network interface u transmission media, hub, repeater, bridge, rout gateway, mode. Case study- Prepare/ present report network components used in any selec organization/Institute/Company
Month: November			**Module/ Unit**	**Sub-units Planned**
Lect.	**Pract.**	**Total**		
15	NA	15	**Unit 2** **Data Link layer**	Data link layer design issues, Error Detection and Correction Codes, Data Link Protocols (Simplex Stop and-wait protocol for Error free and noisy channel) a

				Sliding window protocols. The Transport Layer The Transport Service, Elements of Transport Protocols, Congestion Control, The Internet Transport Protocol: UDP, The Internet Transport Protocols – TCP..
Month: December			**Module/ Unit**	**Sub-units Planned**
Lect.	**Pract.**	**Total**		
15	NA	15	**UNIT 3** **Network Layer**	Network Layer Design issues, Routing algorithms, Congestion Control Algorithms, Quality of Service, Internetworking and The Network Layer in the Internet, Store-and-forward packet switching, Services Provided to the Transport Layer, Implementation of Connectionless and Connection Oriented
Month: January			**Module/ Unit**	**Sub-units Planned**
Lect.	**Pract.**	**Total**		
15	NA	15	**UNIT 4** **The application Layer**	DNS: Domain Name Space, Domain Resource Records, Domain Name Servers. Electronic mail: SMTP, The World Wide Web: Static and dynamic web pages, web applications, HTTP, mobile web. Streaming audio and Video: Digital audio and video, streaming stored and live media, Content delivery: Content and internet traffic, content delivery networks, peer-to-peer networks.

Subject Teacher
(Ms.A.B.Chougule)

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

Head
(Mr. V. B. Pujari)

"ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार" - शिक्षणमहर्षी डॉ. बापूजी साळुंखे

Shri Swami Vivekanand Shikshan Sanstha, Kolhapur.

VIVEKANAND COLLEGE, KOLHAPUR

(Empowered Autonomous)

Affiliated to Shivaji University

NAAC Reaccrediated "A" | College with Potential for excellence | ISO 9001 : 2015

Department of MCA

Teaching Plan

A. Y. 2024-25

Name of Teacher: Mrs. A. O. Teli.
Course Title: Advance Operating system

Class: MCA
Sem: I

Month: October			**Module/ Unit**	**Sub-units Planned**
Lect.	**Pract.**	**Total**		
12	NA	12	**Unit 1** **Design of Operating system**	System Structure, User Perspective, Operating System Services Assumption about Hardware, the Kernel and Buffer Cache Architecture of UNIX Operating System, System Concepts, Buffer Headers, Structure of the Buffer Pool, Scenarios for Retrieval of the Buffer, Reading and Writing Disk Blocks, Advantages and Disadvantages of Buffer Cache, Operating system services and systems calls, system programs, operating system structure, operating systems generations.
Month: November			**Module/ Unit**	**Sub-units Planned**
Lect.	**Pract.**	**Total**		
12	NA	12	**Unit 2** **File system**	Concept of a file, access methods, directory structure, file system mounting, file sharing, protection. File system implementation: file system structure, file system implementation, directory implementation, allocation methods, free-space management, efficiency and performance, comparison of UNIX and windows
Month: December			**Module/ Unit**	**Sub-units Planned**
Lect.	**Pract.**	**Total**		

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

12	NA	12	**Unit 3** **Structure of processes and process control**	Process States and Transitions Layout of System Memory, The Context of a Process, Manipulation of the Process Address Space, Sleep Process Creation/Termination, The User ID of a Process, Changing the Size of a Process. CONCURRENCY AND SYNCHRONIZATION: Process synchronization, critical section problem, Peterson's solution, synchronization hardware, semaphores, classic problems of synchronization, readers and writers problem, dining philosophers problem, monitors, synchronization examples(Solaris), atomic transactions
Month: January			**Module/ Unit**	**Sub-units Planned**
Lect.	**Pract.**	**Total**		
12	NA	12	**Unit 4** **Distributed operating system**	Design of distributed OS, Resource sharing, Distributed OS architectures, software layers, Architectural Model, The Operating System Layer, Protection, Processes and Threads, Communication and invocation, Distributed File System: File Service Architecture, Sun Network File System, the Andrew File System, and Recent Advances. System model, deadlock characterization, deadlock prevention, detection and avoidance, recovery from deadlock banker's algorithm

Subject Teacher,
Mrs.A. O. Teli.

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

Head of Department,
(Mr. V. B. Pujari.)

Department of MCA
Teaching Plan
A. Y. 2024-25

Name of Teacher: Mrs. A. O. Teli.
Course Title: Cyber Security

Class: MCA
Sem: I

Month: October			**Module/ Unit**	**Sub-units Planned**
Lect.	**Pract.**	**Total**		
06	NA	06	**Unit 1** **Introduction to Cyber security**	Introduction to Cyber security, Defining Cyberspace and Overview of Computer and Web-technology, Architecture of cyberspace, Communication and web technology.
Month: November			**Module/ Unit**	**Sub-units Planned**
Lect.	**Pract.**	**Total**		
06	NA	06	**Unit 1** **Introduction to Cyber security**	Internet, World wide web, Advent of internet, Internet infrastructure for data transfer and governance, Internet society, Regulation of cyberspace, Concept of cyber security, Issues and challenges of cyber security
Month: December			**Module/ Unit**	**Sub-units Planned**
Lect.	**Pract.**	**Total**		
06	NA	06	**Unit 2** **Cybercrime and Cyber law**	Cybercrime and Cyber law, Classification of cybercrimes, Common cybercrimes- cybercrime targeting computers and mobiles, cybercrime against women and children, financial frauds, social engineering attacks, malware and ransomware attacks, zero day and zero click attacks, Cybercriminals modus-operandi .

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

Month: January			Module/ Unit	Sub-units Planned
Lect.	Pract.	Total		
06	NA	06	**Unit 2** **Cybercrime and Cyber law**	Reporting of cybercrimes, Remedial and mitigation measures, Legal perspective of cybercrime, IT Act 2000 and its amendments, Cybercrime and offences, Organisations dealing with Cybercrime and Cyber security in India, Case studies : Demonstration of email phishing attack and preventive measures.

Subject Teacher
(Mrs.A. O. Teli.)

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

Head of Department
(Mr. V. B. Pujari.)

Annual Teaching Plan

Academic Year: 2024-2025 **Term :** II **Department:** MCA

Course Title: Information Security (Part-I) (MCA-I SEM-II)

Name of the teacher: Miss. Ashwini B. Chougule

Month : February			Module1:	Sub-Units Planned
Lecture	Practical	Total		
15	5	20	**Definition of security**	Introduction, Definition of security, Assessing security, Security terminology , Historical developments, Structure of security, Introduction to Information Security, The Need for Security , Critical Characteristics of Information, NSTISSC Security Model, Components of an Information System, Securing the Components, Balancing Security and Access, The Security SDLC
Month : February-March			**Module2:**	**Sub-Units Planned**
Lecture	**Practical**	**Total**		
15	5	20	**Risk Management**	Risk Management and Special requirements such as Emanation Security/TEMPEST Standards, Planning for Security, Rainbow Series Reports for DOD; DHS and CNSS guidance: Firewalls & VPNs, Need for Security, Business Needs, Threats, Attacks, Legal, Ethical and Professional Issues - An Overview of Computer Security - Access Control Matrix, Policy-Security policies, Confidentiality policies, Integrity policies and Hybrid policies.
Month : March-April			**Module3:**	**Sub-Units Planned**
Lecture	**Practical**	**Total**		
15	5	20	**Cryptography**	Applications of cryptography, Terminology, Evolution of cryptography, Caesar ciphers, one-time pads, Operation of DES, AES ,Public-key cryptosystems, Topics in Information Systems Security :- Minimum privilege ,Compartmentalization , Dual controls ,Security perimeters, Trustworthy software, proof of design correctness, Single-points-of-failure, Covert channels, Inference, Risk Management: Identifying and Assessing Risk, Assessing and Controlling Risk - Systems: Access Control Mechanisms, Information Flow and Confinement Problem.
Month : April-May			**Module4:**	**Sub-Units Planned**
Lecture	**Practical**	**Total**		
15	5	20	**Technology: Blueprint for Security**	Technology: Blueprint for Security, IDS and Access Control Cryptography, Physical Security including Emanations Security , Handling, labelling and destruction of Sensitive information) Implementing Security, Security and Personnel, Security Technology, IDS, Scanning and Analysis Tools, Cryptography, Access Control Devices, Physical Security, Security and Personnel, Secure programming languages- concepts structured multiprogramming, shared classes, cooperating sequential processes.

(Signature of the Teacher)

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

(Signature of the Head of Department)

HEAD
DEPARTMENT OF M. C. A.
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

Annual Teaching Plan

Academic Year: 2024-2025 **Term :** II **Department:** MCA

Course Title: Advance Java (Part-I) (MCA-I SEM-II)

Name of the teacher: Miss. Ashwini B. Chougule

Month : February-March			Module1:	Sub-Units Planned
Lecture	Practical	Total		
15	5	20	**Applet Fundamentals**	Applets: Applet Fundamentals – Applet Class – Applet Life Cycle – Steps for developing an Applet Program – Passing values through Parameters – Graphics in an Applet – Event handling. GUI Applications: Graphical User Interface – Creating Windows – Dialog Boxes – Layout Managers – AWT Component classes – Swing Component classes – Event handling – Other AWT Components – AWT graphics classes – Other Swing controls. Java Database Connectivity: Types of drivers – JDBC Architecture – JDBC Classes and Interfaces – Basic steps in developing JDBC application – Creating a new database and table with JDBC – Working with Database metadata. Servlets: Basics – Advantages – Servlet alternatives – strengths – Architectures – Servlet Life Cycle – Generic Servlet – HTTP Servlet – Passing parameters – Retrieving parameters – server side include – Cookies – Filters.
Month : April-May			**Module2:**	**Sub-Units Planned**
Lecture	**Practical**	**Total**		
15	5	20	**Java Server Pages**	Java Server Pages: Overview – JSP and HTTP – JSP Engines – Working of JSP – Anatomy of JSP – JSP Syntax – Creating simple JSP page – Components of JSP – Implicit Objects. Web Programming – Client Side Programming: Client Side Programming technologies – form design with HTML and CSS – Client side Validation using JavaScript – Content Structuring using XML – Adding interactivity with AJAX. Web Programming – Server Side Programming: Web Servers – Handling Request and Response – Database Access – Session Management

(Signature of the Teacher)

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

(Signature of the Head of Department)

HEAD
DEPARTMENT OF M. C. A.
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

Annual Teaching Plan

Academic Year: 2024-2025 **Term :** II **Department:** MCA

Course Title: Advance Web Technology (Part-I) (MCA-I SEM-II)

Name of the teacher: Mrs. Ankita O. Teli

Month : February			Module1:	Sub-Units Planned
Lecture	Practical	Total		
15	5	20	**INTRODUCTION TO XHTML**	Introduction, Common Infrastructure, Semantics, structure, and APIs of HTML documents, Elements, links, Tabular data, Forms & Script elements, Web Application APIs, The XHTML syntax, User Interaction & Loading web pages.
Month : February-March			**Module2:**	**Sub-Units Planned**
Lecture	**Practical**	**Total**		
15	5	20	**PHP Basics Introduction to Server-side programming**	PHP Basics Introduction to Server-side programming, PHP variables, decision and looping with examples, PHP and HTML, Arrays, Functions, Browser control and detection, String, Form processing, File uploads, Dates and time zone, Working with Regular Expressions, Exception Handling, Working with JSON data, Object Oriented Programming with PHP
Month : March-April			**Module3:**	**Sub-Units Planned**
Lecture	**Practical**	**Total**		
15	5	20	**PHP MVC Framework**	Laravel Introduction to Laravel and MVC, Environment Setup, Routes, Namespaces, Controllers, Views, Request Response, Redirections, Forms, Session, Cookies, Database connectivity and CRUD Operations.
Month : April-May			**Module4:**	**Sub-Units Planned**
Lecture	**Practical**	**Total**		
15	5	20	**Introduction to Angular JS**	Introduction to AngularJS: Expressions, Modules, Directives, Directive, Data Binding, Controllers, Scope, Filters, Services, AngularJS AJAX, Tables, Select Boxes. Introduction to Node JS: Advantages of Node JS, Setup Development Environment, Functions, Buffer, Module, Modules Types, Node Package Manager, Creating Web Server, File System, Debugging Node JS Application, Events.

(Signature of the Teacher)

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

(Signature of the Head of Department)

HEAD
DEPARTMENT OF M. C. A.
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

Annual Teaching Plan

Academic Year: 2024-2025 **Term :** II **Department:** MCA

Course Title: Cloud Computing (Part-I) (MCA-I SEM-II)

Name of the teacher: Mrs. Ankita O. Teli

Month : February-March			Module1:	Sub-Units Planned
Lecture	Practical	Total		
15	5	20	**Cloud Computing Paradigms**	Cloud Computing: Definition, roots of cloud computing, characteristics, cloud architecture, Computing Introduction to Cloud Computing, History and Evolution of Cloud Computing, Types of clouds, Private Public and hybrid clouds, Cloud Computing architecture, Cloud computing infrastructure
Month : April-May			**Module2:**	**Sub-Units Planned**
Lecture	**Practical**	**Total**		
15	5	20	**Cloud Computing Service Platforms**	Cloud Computing Service Platforms – compute services, storage services, database services, application services, queuing services, e-mail services, notification services, media services, content delivery services, analytics services, deployment & management services, Security in cloud computing: issues, threats, data security and information security Cloud Computing Companies and Migrating to Cloud Web-based business services. Virtualization: benefits & drawbacks of virtualization, server virtualization, virtualization of – operating system, platform, CPU, network, application, memory and I/O devices etc

(Signature of the Teacher)

VIVEKANAND COLLEGE, KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

(Signature of the Head of Department)

HEAD
DEPARTMENT OF M. C. A.
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

Annual Teaching Plan

Academic Year: 2024-2025 **Term :** II **Department:** MCA

Course Title: Advance Web Technology (Part-I) (MCA-I SEM-II)

Name of the teacher: Mrs. Ankita O. Teli

Month : February			Module1:	Sub-Units Planned
Lecture	Practical	Total		
15	5	20	**INTRODUCTION TO XHTML**	Introduction, Common Infrastructure, Semantics, structure, and APIs of HTML documents, Elements, links, Tabular data, Forms & Script elements, Web Application APIs, The XHTML syntax, User Interaction & Loading web pages.
Month : February-March			**Module2:**	**Sub-Units Planned**
Lecture	**Practical**	**Total**		
15	5	20	**PHP Basics Introduction to Server-side programming**	PHP Basics Introduction to Server-side programming, PHP variables, decision and looping with examples, PHP and HTML, Arrays, Functions, Browser control and detection, String, Form processing, File uploads, Dates and time zone, Working with Regular Expressions, Exception Handling, Working with JSON data, Object Oriented Programming with PHP
Month : March-April			**Module3:**	**Sub-Units Planned**
Lecture	**Practical**	**Total**		
15	5	20	**PHP MVC Framework**	Laravel Introduction to Laravel and MVC, Environment Setup, Routes, Namespaces, Controllers, Views, Request Response, Redirections, Forms, Session, Cookies, Database connectivity and CRUD Operations.
Month : April-May			**Module4:**	**Sub-Units Planned**
Lecture	**Practical**	**Total**		
15	5	20	**Introduction to Angular JS**	Introduction to AngularJS: Expressions, Modules, Directives, Directive, Data Binding, Controllers, Scope, Filters, Services, AngularJS AJAX, Tables, Select Boxes. Introduction to Node JS: Advantages of Node JS, Setup Development Environment, Functions, Buffer, Module, Modules Types, Node Package Manager, Creating Web Server, File System, Debugging Node JS Application, Events.

(Signature of the Teacher)

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

(Signature of the Head of Department)

HEAD
DEPARTMENT OF M. C. A.
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

Annual Teaching Plan

Academic Year: 2024-2025 **Term :** II **Department:** MCA

Course Title: Cloud Computing (Part-I) (MCA-I SEM-II)

Name of the teacher: Mrs. Ankita O. Teli

Month : February-March			Module1:	Sub-Units Planned
Lecture	Practical	Total		
15	5	20	**Cloud Computing Paradigms**	Cloud Computing: Definition, roots of cloud computing, characteristics, cloud architecture, Computing Introduction to Cloud Computing, History and Evolution of Cloud Computing, Types of clouds, Private Public and hybrid clouds, Cloud Computing architecture, Cloud computing infrastructure
Month : April-May			**Module2:**	**Sub-Units Planned**
Lecture	**Practical**	**Total**		
15	5	20	**Cloud Computing Service Platforms**	Cloud Computing Service Platforms – compute services, storage services, database services, application services, queuing services, e-mail services, notification services, media services, content delivery services, analytics services, deployment & management services, Security in cloud computing: issues, threats, data security and information security Cloud Computing Companies and Migrating to Cloud Web-based business services. Virtualization: benefits & drawbacks of virtualization, server virtualization, virtualization of – operating system, platform, CPU, network, application, memory and I/O devices etc

(Signature of the Teacher)

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

(Signature of the Head of Department)

HEAD
DEPARTMENT OF M. C. A.
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

Annual Teaching Plan

Academic Year: 2024-2025 **Term :** II **Department:** MCA

Course Title: Object Oriented Programming using Python (Part-I) (MCA-I SEM-II)

Name of the teacher: Mr. Vijay Bapuso Pujari

Month : February			Module1:	Sub-Units Planned
Lecture	Practical	Total		
15	5	20	**Introduction to Python**	Introduction to Python – Advantages of using Python – Executing Python Programs – Python's Core data types – Numeric Types – String Fundamentals, Operators and Operands in Python. (Arithmetic, relational and logical operators), Operator precedence .Expressions and Statements (Assignment statement); Taking input (using raw_input() and input()) and displaying output - print statement , Comments in Python. Conditional and Looping Construct if - else statement and nested if – else while, for, use of range function in for, Nested loops , break, continue.
Month : February-March			**Module2:**	**Sub-Units Planned**
Lecture	**Practical**	**Total**		
15	5	20	**Classes and Object Oriented programming with Python**	Introduction to Python – Advantages of using Python – Executing Python Programs – Python's Core data types – Numeric Types – String Fundamentals, Operators and Operands in Python. (Arithmetic, relational and logical operators), Operator precedence .Expressions and Statements (Assignment statement); Taking input (using raw_input() and input()) and displaying output - print statement , Comments in Python. Conditional and Looping Construct if - else statement and nested if – else while, for, use of range function in for, Nested loops , break, continue.
Month : March-April			**Module3:**	**Sub-Units Planned**
Lecture	**Practical**	**Total**		
15	5	20	**Database Handling using Python**	Database Handling using Python – NumPy – Pandas – Machine learning with Python – Data Visualization in Python. Lists : Concept of mutable lists, creating, initializing and accessing the elements of list ,List operations. Tuples : Immutable concept, creating, initializing and accessing the elements in a tuple; Tuple functions: cmp(), len(), max(), min(), tuple() .Sets :Concept of Sets , creating, initializing and accessing the elements of ,Sets operation(Membership, union, intersection, difference, and symmetric difference. Dictionaries :Concept of key-value pair, creating, initializing and accessing the elements in a dictionary, Traversing, Dictionary functions & Methods.
Month : April-May			**Module4:**	**Sub-Units Planned**
Lecture	**Practical**	**Total**		

15	5	20	**Introduction to Python**	Concept of class, object and instances Constructor, class attributes and destructors Real time use of class in live projects Inheritance , overlapping and overloading operators Adding and retrieving dynamic attributes of classes Programming using Oops support. **Pyth**on Exceptions Handling What is Exception? Handling various exceptions using try....except...else ,Try-finally clause,Argument of an Exception and create self exception class,Python Standard Exceptions. **Rai**sing an exceptions, User-Defined Exceptions

(Signature of the Teacher)

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

(Signature of the Head of Department)

HEAD
DEPARTMENT OF M. C. A.
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

Annual Teaching Plan

Academic Year: 2024-2025 **Term :** II **Department:** MCA

Course Title: Software Engineering (Part-I) (MCA-I SEM-II)

Name of the teacher: Mr. Vijay Bapuso Pujari .

Month : February			**Module1:**	**Sub-Units Planned**
Lecture	**Practical**	**Total**		
15	5	20	**Introduction to Software Engineering & Process Models**	Software and Software Engineering: The nature of Software, The unique nature of WebApps, Software Engineering, The software Process, Software Engineering Practice, Software Myths. Process Models: A generic process model, Process assessment and improvement, Prescriptive process models: Waterfall model, Incremental process models, Evolutionary process models, Concurrent models, Specialized process models. Unified Process , Personal and Team process models
Month : February-March			**Module2:**	**Sub-Units Planned**
Lecture	**Practical**	**Total**		
15	5	20	**Requirement Engineering Requirements**	Groundwork for Understanding of Software, Requirements; Overview of Eliciting Requirements, Developing Use Cases, Building the Requirements Model; Negotiating Requirements; Validating Requirements; Requirement Modelling Strategies; Overview of Flow Oriented Modelling, Behavioural Modelling
Month : March-April			**Module3:**	**Sub-Units Planned**
Lecture	**Practical**	**Total**		
15	5	20	**Design Concepts**	Design Model; Architectural Styles, Architectural Design, Assessing Alternative architectural Designs, Architectural mapping Using Data Flow, User Interface Design: Golden Rules of User Interface Design; User Interface Analysis and Design; Interface Analysis; Interface Design steps
Month : April-May			**Module4:**	**Sub-Units Planned**
Lecture	**Practical**	**Total**		
15	5	20	**Semantic Analysis:**	Introduction, The place of software quality in project planning, Importance of software quality, Defining software quality, Software quality models, product versus process quality management. Software Project Estimation: Observations on Estimation, Decomposition Techniques, Empirical Estimation Models.

(Signature of the Teacher)

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

(Signature of the Head of Department)

HEAD
DEPARTMENT OF M. C. A.
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)