E.M. GOPALAKRISHNA KONE YADAVA WOMEN'S COLLEGE

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LESSON PLAN
2022-2023

DEPARTMENT OF **COMPUTER APPLICATIONS**

(PG –Odd & Even Semester)

DEPARMENT OF MCA

SEM 1

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LESSON PLAN
2022-2023

Class : I MCA (I Semester)

Sub. Code : 22OPCA12

Title of the Paper : Object Oriented Programming in C++

Total Hours : 60 hrs

Month	Units	Description	Hrs.	Mode of Teaching	Course Teacher Signature
July 2022	I	■ **Introduction to C++ :** Evolution of C++ ANSI Standard – Preface to Object-Oriented Programming Key Concepts of Object-Oriented Programming - Advantages of OOP – Object –Oriented Languages – Structure of a C++ Program . ■ **Input and Output in C++ :** Pre-Defined Streams – Stream Classes Formatted and Unformatted Data – Unformatted Console I/O Operations Formatted Console I/O Operations — Manipulators – User-Defined Manipulators . ■ **C++ Declarations :** Tokens – Variable Declaration and Initialization -/ Data Types in C++ - Scope Access Operator - Memory Management Operators – Comma Operator.	12	Chalk & Talk , Spot Test , Demo Coding	H. Nue M. MURU GESWARI
Aug 2022	II	■ **Functions in C++ :** Introduction - Parts of Function – Passing Arguments Return by Reference – Default Arguments – Const Arguments Inline Functions – Function Overloading – Principles of Function Overloading – Recursion. ■ **Classes and Objects:** Introduction – Structures inC++ - Classes in C++ Declaring Objects – The Public, Private, Protected Keywords - Defining Member Functions and its Characteristics- Outside Member Function as Inline – Rules for Inline functions ■ Data Hiding or Encapsulation – Classes, Objects and Memory – Static Member Variables and Functions – Static Object - Objects as Function Arguments – Friend Functions – Overloading Member Functions .	12	Chalk & Talk, Spot Test , Demo Coding	H. Me M. MURUG ESWARI

Sep 2022	III	▪ **Constructors and Destructors** : Introduction – Constructors and Destructors and its Characteristics - Constructors with Arguments – Overloading Constructors – Constructors with Default Arguments ● Copy Constructors – Destructors – Calling Constructors and Destructors – Local Versus Global Object. ▪ **Operator Overloading and Type Conversion :** Introduction – The Keyword Operator – Overloading Unary Operators - Overloading with friend Function – Type Conversion – Rules for Overloading Operators.	12	Chalk & TalkDemo Coding	M. Nu M- MURUGES WARI
Oct 2022	IV	▪ **Inheritance:** Introduction – Access Specifiers and Simple Inheritance – Protected Data with Private Inheritance – Types of Inheritances – Single Inheritance – Multilevel Inheritance – Multiple Inheritance – Hierarchical Inheritance Hybrid Inheritance – Multipath Inheritance – Virtual Base Classes Constructors, Destructors and Inheritance - Abstract Classes – Constructors in Derived Class. ▪ **Binding, Polymorphism and Virtual Functions :** Introduction – Binding in C++ - Pointer to Base and Derived Class Objects Virtual Functions – Rules for Virtual Functions – Array of Pointers ▪ Pure Virtual Functions – Abstract Classes – Working of Virtual Functions - Virtual Functions in Derived Classes– Constructors and Virtual Functions Virtual Destructors – Destructors and Virtual Functions.	12	Chalk & Talk, Assignment , Demo Coding	M. No M-MURUGES WARI
Nov 2022	V	▪ **Application with Files :** Introduction – File Stream Classes – Steps of File Operations Checking for Errors – Finding End of a File – File Opening Modes – File Pointers and Manipulators - Sequential Access Files – Random Access Operation – Command Line Arguments. ▪ **Exception Handling :** Introduction – Principles of Exception Handling – The Keywords *try, throw* and *catch* – Guidelines for Exception Handling - Multiple Catch Statements – Catching Multiple Exceptions – Re-throwing Exception – Exceptions in Constructors and Destructors ▪ Exception and Operator Overloading – Exception and Inheritance – Class Template with Exception Handling.	12	Students Seminar	M. No M-MURUGES WARI

S. Vijayan

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LESSON PLAN
2022-2023

Class   : I MCA (I Semester)

Sub. Code   : 22OPCA13

Title of the Paper : Relational Database Management System

Total Hours : 75 hrs

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Month Units	Description	Hrs.	Mode of Teaching	Course Teacher Signature
1	• **Introduction** Database System Applications – Purpose of Database Systems –View of Data – Database Languages – Relational databases - Database Design –Data storage and querying			
July 2022	• Transaction Management - Database Architecture – Database Users and Administrators - History of Database Systems.	15	Chalk & Talk , Spot Test , Demo Coding	
	• **Relational Databases:** Introduction to the Relational Model . Structure of Relational Databases – Database Schema – Keys – Schema Diagrams Relational Query Languages – The Relational Operations			
Aug 2022 II	• **Introduction to SQL** SQL Data Definition – Basic Structure of SQL Queries- Additional Basic Operations –		Chalk & Talk, Spot Test , Demo Coding	
	• Set Operations – Null Values - Aggregate functions. **Advanced SQL**: Accessing SQL From a Programming Language –	15		
	• Functions and Procedures - Triggers - Recursive Queries – Advanced Aggregation Features			

Sep 2022	III	▪ **Host Objects: Browsers and DOM** - Introduction to DOM – The Document tree ▪ **Server side Programming – Java Servlets** - Servlet Architecture Overview - A 'Hello World' Servlet – ▪ Servlet Generating Dynamic Content – Servlet Life Cycle - Parameter Data – Sessions - Cookies – URL Rewriting	15	Chalk & TalkDemo Coding	*J.chinna*
Oct 2022	IV	▪ **Representing Web Data :XML** - XML Documentations and Vocabularies – XML versions and the XML Declarations ▪ XML Namespaces - Event Oriented Parsing: SAX - Transforming XML Documents ▪ **Separating programming presentation: JSP** – Introduction to JSP - JSP and Servlets – Running JSP Applications - Basic JSP - JavaBeans Classes and JSP	15	Chalk & Talk, Assignment , Demo Coding	*J.chinna*
Nov 2022	V	▪ **Enterprise JavaBeans: The Big Picture:** Introduction – Transaction Processors-Two-Tier - Client-Server Architecture - Three-Tier Architecture - Distributed Transaction Processing - EJB's Role. ▪ **EJB's Architecture:** Logical Architecture – Overview of EJB's Architecture ▪ A High-Level View of an EJB Conversation – RMI Clients - CORBA Clients - Building and Deploying EJBs	15	Students Seminar	*J.chinna*

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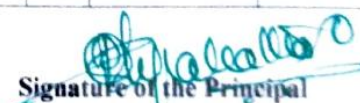MADURAI-625 014

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LESSON PLAN
2022-2023

Class : I MCA
Sub. Code : 22OPCA14
Title of the Paper : Data Structures and Algorithms
Total Hours : 75 hrs

Month	Units	Description	Hrs.	Mode of Teaching	Course Teacher Signature
July 2022	I	▪ Algorithm Analysis ▪ Lists ▪ Stacks ▪ Queues	15	Chalk & Talk,	S.Vijay S.VIJAYA SANKAN
Aug 2022	II	● Trees ● AVL Tree ● Hashing, Rehashing ● Universal Hashing , Extendible Hashing.	15	Chalk & Talk,	S Vijay S VIJAYA SANKAR
Sep 2022	III	● Model , Simple Implementation , Binary Heap ● Applications of Priority Queues – d-Heaps – Leftist Heaps ● Skew Heaps , Binomial Queues ● Preliminaries,-Insertion Sort , A Lower Bound for Simple Sorting Algorithms ● Shell Sort , Heap Sort ● Merge Sort , Quick Sort, External Sorting .	15	PPT	S.Vijay S.VIJAYA SANKAR
Oct 2022	IV	▪ Definitions , Topological Sort ,Shortest Path Algorithms. ▪ Network Flow Problems , MinimumSpanning Tree ▪ Applications of Depth First Search,Introduction to NP-Completeness	15	Chalk & Talk, PPT	S.Vijay S.VIJAYA SANKAR
Nov 2022	V	● Greedy Algorithms , Divide andConquer ● Dynamic Programming , RandomizedAlgorithms Backtracking Algorithms	15	Seminar, PPT	S.Vijay S.VIJAYA SANKAR

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DEPARTMENT OF COMPUTER APPLICATIONS
LESSON PLAN
2022 ODD SEMESTER

TITLE : Operating Systems
SUB CODE : 22OPCADSE1A
NAME OF THE STAFF : P. Indhuja

Month	Unit	Syllabus	Hours	Teaching Methods	Signature
July 2022	I	**Introduction:** What Operating Systems Do – Computer System Organization -Computer System Architecture – Operating System Structure – Operating System Operations – Open Source Operating Systems – **Operating System Structures:** Operating System Services – User Operating System Interface – System Calls – Types of System Calls – System Programs.	12 hrs	chalk and Talk	P. (P·INDHUJA)
Aug 2022	II	**Processes Management:** Process Concept – Process Scheduling – Operation on Process. **Process Scheduling:** Basic Concepts - Scheduling Criteria – Scheduling Algorithms - Thread Scheduling- Multiple Processors Scheduling	12 hrs	chalk and Talk	P. (P·INDHUJA)
Sep 2022	III	**Synchronization:** Background - The Critical Section Problem - Peterson's Solution –Synchronization Hardware – Semaphores – Classic Problems – Monitors –Synchronization Examples- **Deadlocks:** System Model -Deadlock Characterization -Methods for Handling Deadlocks- Deadlock Prevention-Deadlock Avoidance-Deadlock Detection-Recovery from Deadlock.	12 hrs	chalk and Talk, Assignment	P. (P·INDHUJA)
Oct 2022	IV	**Main Memory:** Background- Swapping- Contiguous Memoryallocation - Segmentation - Paging-Structure of the Page Table- **Virtual Memory :** Background – Demand Paging-Copy on Write – Page Replacement - Allocation of Frames - Thrashing	12 hrs	chalk and Talk	P. (P·INDHUJA)

| Nov 2022 | V | File System : File concepts – Access methods – **File System Implementation** : File System Structure – Allocation Methods – Free Space Management - **Mass-Storage Structure** : Overview of Mass Storage Structure – Disk Structure – Disk Scheduling – Disk Management – Swap Space Management | 12 hrs | Seminar | P. toll fr (P. ƧNDHUƧA) |

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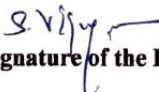E.M.G. YADAVA WOMEN'S COLLEGE
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LESSON PLAN
2022-2023

Class	: I MCA
Sub. Code	: 22OPCAID1
Title of the Paper	: Front End Web Development
Total Hours	: 30 hrs

LESSON PLAN:

Month	Units	Description	Hrs.	Mode of Teaching	Course Teacher Signature
July 2022	I	• Hypertext Markup Language: Basic HTML- • The DocumentBody – Text – • Hyperlinks –Adding More Formatting- • Lists-Using Color and Images	6	Chalk & Talk , Spot Test , Demo Coding	J.chinna
Aug 2022	II	▪ Cascading Stylesheets: Introduction – Using Styles: ▪ Simple Examples- Defining your own styles ▪ Properties and values in Styles – Stylesheets – ▪ Worked Example – Formatting Blocks of Information.	6	Chalk & Talk, Spot Test , Demo Coding	J.chinna
Sep 2022	III	• An Introduction to JavaScript – • Definition of Dynamic HTML –JavaScript- • Java script the basics Variables String • Manipulation Mathematical Functions Statements	6	Chalk & Talk Demo Coding	J.chinna
Oct 2022	IV	• Objects in JavaScript: • Data and Objects in JavaScript- RegularExpressions- • Exception Handling- • Built-in Objects.	6	Chalk & Talk, Assignment, Demo Coding	J.chinna
Nov 2022	V	• Dynamic HTML with JavaScript: Data Validation– • Opening a New Window – • Messages and Confirmations – The Status Bar–Writing to a Different Frame- Rollover Buttons	6	Chalk & Talk,	J.chinna

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SEM 2

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LESSON PLAN
2022-2023

Class   : I MCA (II Semester)
Sub. Code   : 22OPCA21
Title of the Paper : Open Source Technologies
Total Hours   : 75 hrs

LESSON PLAN:

Month	Units	Description	Hrs.	Mode of Teaching	Course Teacher Signature
Dec 2022	1	• What is PHP – What is MySQL – Deciding on a Web Application Platform .Server-Side Scripting • Overview : Static HTML – Client-Side Technologies – Server-Side Scripting . Learning PHP Syntax and Variables : PHP Syntax – Comments – Variables – • Types in PHP – The Simple Types – Doubles – Booleans – NULL – Strings – Output .	15	Chalk & Talk , Spot Test , Demo Coding	J.ehnna
Jan 2023	II	• PHP Control Structures and Functions : Boolean Expressions – Branching – Looping – Using Functions • Function Documentation – Own Functions – Functions and variable Scope – Function Scope . PHP String Handling : Strings in PHP , String Functions – • Passing Information with PHP – HTTP Is Stateless – GET Arguments – A Better Use forget Style URLs – POST Arguments – Formatting Form Variables – PHP Superr global Arrays.	15	Chalk & Talk, Spot Test , Demo Coding	J.ehnny

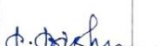|				
Feb 2023	III	• Learning Arrays — Uses of Arrays — Creating Arrays — Retrieving Values — Multidimensional • Arrays — Inspecting Arrays — Deleting from Arrays — Iteration — PHP Number Handling — • Numerical Types — Mathematical Operators — Mathematical Functions	15	Chalk & Talk,Demo Coding
Mar 2023	IV	• Introducing Databases And MySQL : What is a Database – Why a Database - PHP-Supported Databases — Structured Query Language (SQL) : Relational Databases and SQL. – SQL Standards – SQL. • Database Design - Privileges Security. Database Administration and Design : MySQL Client Commands • MySQL User Administration – Backups – Replication Recovery .	15	Chalk & Talk, Assignment , Demo Coding
Apr 2023	V	• Performing Database Queries : HTML Tables and Database Tables – Complex Mappings – Creating sample Tables . Integrating Web Forms and Databases : • HTML Forms – Basic Form Submission to a Database,Editing Data with an HTML Form . Improving Database Efficiency : • Connections - Indexing and Table Design	15	Students Seminar

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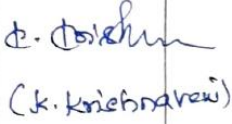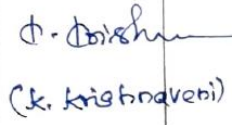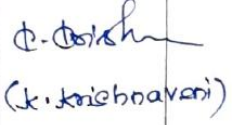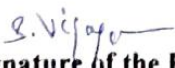E.M.G. YADAVA WOMEN'S COLLEGE
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LESSON PLAN
2022-2023

Class	: I MCA (II Semester)
Sub. Code	: 22OPCA22
Title of the Paper	: Advanced Java Programming
Total Hours	: 75 hrs.
Name	: k,Krishnaveni

Month	Units	Description	Hrs.	Mode of Teaching	Course Teacher Signature
Dec 2022 & Jan 2023	I	Data Types, Variables and Arrays: Integers - Floating-Point Types –Characters – Booleans - Variables. Operators: Arithmetic Operators - The Bitwise Operators - Relational Operators - Boolean Logical Operators. Control Statements: Java's Selection Statements - Iteration Statements - Jump Statements. Introducing Classes: Class Fundamentals - Declaring Objects - Introducing Methods – Constructors.	15	Chalk & Talk Chalk & Talk Chalk & Talk	₵. ௬௯௬ (k. krishnaveni)
Jan 2023	II	Packages and Interfaces: Packages - Access Protection - Importing Packages - Interfaces. Exception Handling: Exception Handling Fundamentals - Exception Types - Uncaught Exceptions - Using try And catch - Multiple catch Clauses - Nested try Statements. Multithreaded Programming: The Java Thread Model – The Main Thread – Creating a Thread – Creating Multiple Threads - Thread Priorities – Synchronization – Inter thread Communication.	15	Chalk & Talk Chalk & Talk Chalk & Talk	₵. ௬௯ (k. krishnaveni)

Month	Unit	Topics	Hours	Method	Signature
Feb 2023	III	String Handling: The String Constructor – String Length – Special String Operations – Character Extraction – String Comparison – Searching Strings – Modifying Strings. Networking: Networking Basics - The Networking Classes and Interfaces - InetAddress - Inet4Address and Inet6Address - TCP/IP Client Sockets - URL - URL Connection. The Applet Class: Applet Basics - Applet Architecture - An Applet Skeleton - Simple Applet Display Methods - The HTML APPLET Tag.	15	Chalk & Talk Chalk & Talk Chalk & Talk	ℰ. ᵭᵒᵏᵏᵘ (k. krishnaveu)
Mar 2023	IV	Event Handling: The Delegation Event Model – Event Classes – Sources of Events – Event Listener Interfaces . Introducing the AWT : Working With Windows , Graphics and Text : AWT Classes - Window Fundamentals – Introducing Graphics - Working with Color . Using AWT Controls, Layout Managers and Menus : Labels - Using Buttons – Applying Check Boxes - Using Lists - Using a TextField -Using a TextArea – Understanding Layout Managers.	15	PPT, Group Discussion Chalk & Talk PPT,	₫. ᵭᵒᵏᵏᵘ (k. krishnaveni)
Apr 2023	V	Introducing GUI Programming with Swing: Introducing Swing: Components and Containers - The Swing Packages - A Simple Swing Application. Java Beans: What Is a Java Beans – Advantage of Java Beans – The Java Beans API. Introducing Servlets: The Life Cycle of a Servlet – Servlet Development Options - A Simple Servlets – The Servlets API.	15	Student's Seminar	₫. ᵭᵒᵏᵏᵘ (k. krishnaveni)

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LESSON PLAN
2022-2023

Class : I MCA (II Semester)
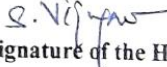
Sub. Code : 22OPCA23

Title of the Paper : Software Engineering

Total Hours : 60 hrs

Month	Units	Description	Hrs.	Mode of Teaching	Course Teacher Signature
Dec 2022 & Jan 2023	I	• **Software Engineering:** Software Engineering – A Layered Technology- **A Process Models** -A Generic Process Model – Process Assessment and Improvement - • Prescriptive Process Models - Specialized Process Models – The Unifies Process Model- Personal and Team Process Models – Process Technology- Product and Process • **Agile Development** – What is Agility? – Agility and the cost of change- What is an Agile Process? - Extreme programming (XP) – Other Agile Process Models	12	Chalk & Talk PPT	M.Nwe M-MURUGE SWARI
Jan 2023	II	• **Estimation**: Observation on Estimation - Empirical Estimation Models. **Project Scheduling:** Basic Concepts – Project Scheduling. • **Risk Management**: Reactive Vs. Proactive Risk Strategies - Software Risks – Risk Identification – Risk Projection – Risk Refinement. • **Principles that Guide Practice** – Software engineering Knowledge - Core Principles Principles That Guide Each -Framework Activity	12	Chalk & Talk PPT	M.Mu M. MURUGU WARI

Feb 2023	III	• **Understanding Requirements:** Requirements Engineering – Establishing the Ground work – Eliciting Requirements – Developing Use Cases – Building the Requirements Model. • Negotiating Requirements- Validating Requirements - **Design Concepts :** Design within the Context Of Software Engineering - Design Concepts – The Design Model • **Architectural Design:** Software Architecture- Architectural Genres – Architectural Styles- Architectural Design – Assessing AlternativeArchitectural Design – Architectural Mapping Using Data Flow.	12	Chalk & Talk	M. Me M. MURUGE WARI
Mar 2023	IV	• **Software Testing Strategies:** A Strategic Approach To Software Testing – Strategic Issues - Test Strategies For Conventional Software • Test Strategies for Object-Oriented Software –Test Strategies for Web Apps - Validation Testing - System Testing • **Testing Conventional Applications:** Software Testing Fundamentals - Internal and External Views of Testing - White Box Testing - Basis PathTesting - Control Structure Testing - Black Box Testing – Model Based Testing.	12	PPT, Group Discussion	M. Me M. MURUGE WARI
Apr 2023	V	▪ **Quality Concepts-** What is Quality – Software Quality - **Software Quality Assurance** – Background Issues – Elements of Software Quality Assurance ▪ SQA Tasks ,Goals and Metrics - Formal Approach To SQA - Statistical Software Quality Assurance – Software Reliability ▪ **Software Configuration Management** - Software Configuration Management- The SCM Repository - The SCM Process.	12	Student's Seminar	M. Me M -MURUGE WARI

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LESSON PLAN
2022-2023

Class   : I MCA
Sub. Code   : 22OPCADSE2A
Title of the Paper : Data Mining and Data Warehousing
Total Hours   : 75 hrs

Month	Units	Description	Hrs.	Mode of Teaching	Course Teacher Signature
Dec 2022 & Jan 2023	I	▪ Why Data Mining,- What is Data Mining, What kinds of data can be mined, What kinds of patterns can be mined ▪ Which technologies are used, Which kinds of Applications are targeted, Major issues in Data Mining. ▪ Data Warehouse: Basic Concepts, Data Warehouse Modeling : Data Cube and OLAP – Data Warehouse Design and Usage - Data Warehouse Implementation. ▪ Data Warehouse Design and Usage - Data Warehouse Implementation	15	Chalk & Talk	S.Vijya S VIJAYA SANKARI
Jan 2023	II	● Data Preprocessing: An overview - Data Cleaning ● Data Integration - Data Reduction ● Data Transformation and Data Discretization ● Basic Concepts-Frequent itemset Mining Methods.	15	PPT	S.Vijya S VIJAYA SANKARI
Feb 2023	III	● Basic Concepts ,Decision Tree Induction, Bayes Classification Methods , Rule-Based Classification. ● Bayesian Belief Networks, Classification by Back propagation ● Support Vector Machines ,Lazy Learners, Other Classification Methods.	15	Chalk & Talk, PPT	S.Vijya S VIJAYA SANKARI

Mar 2023	IV	• Cluster Analysis, Partitioning Methods ,Hierarchical Methods , Density-Based Methods, Grid-Based Methods • Probabilistic Model-Based Clustering , Clustering High-Dimensional Data • Clustering Graph and Network Data , Clustering with Constraints	15	Chalk & Talk, PPT	S.Vijya S.VIJAYA SANKARI
Apr 2023	V	• Outliers and Outlier Analysis, Outlier Detection Methods • Mining Complex Data Types, Other Methodologies of Data Mining • Data Mining Applications, Data Mining and Society, Data Mining Trends	15	Seminar, PPT	S.Vijya S.VIJAYA SANKARI

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LESSON PLAN
2022-2023

Class : I MCA
Sub. Code : 22OPCAID2
Title of the Paper : E-Commerce
Total Hours : 30 hrs

Month	Units	Description	Hrs.	Mode of Teaching	Course Teacher Signature
Dec 2022 & Jan 2023	I	• Basics and definition -The Term E- Commerce • E- Commerce with the 5-C -Model • Additional terms - Role of internet	6	Chalk & Talk	S.Vijaya SANKARI
Jan 2023	II	• Frameworks and Architectures - Actors and stakeholders • Fundamental sales process- • Basic Technologies	6	PPT	S.Vijaya S.VIJAYA SANKARI
Feb 2023	III	• B2C Business Model – The Process Model and its variants • Buying via internet • Variants of the process.	6	Chalk & Talk,	S.Vijaya S.VIJAYA SANKARI
Mar 2023	IV	• B2B Business - The Process Model and its variants– • Definition of B2B –Difference between B2B and B2C • Strong B2B relationship – Supply chain management	6	Chalk & Talk, PPT	S.Vijaya S.VIJAYA SANKARI
Apr 2023	V	• Impact of E- Commerce - Ethics ,Morale, & technology • Ethical Aspects of ICT – Information Rights & information duties • Proprietary Rights and duties - Accountability and Check – Overall impacts of E- Commerce	6	Chalk & Talk	S.Vijaya S.VIJAYA SANKARI

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SEM 3

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LESSON PLAN
2022-2023

Class   : II MCA (III Semester)
Sub. Code   : 21OMC31
Title of the Paper : Web Technologies
Total Hours   : 75 hrs

LESSON PLAN:

Month	Units	Description	Hrs.	Mode of Teaching	Course Teacher Signature
July 2022	I	▪ **Introduction:** The Internet - Basic Internet Protocols - The World Wide Web - HTTP Request Message - HTTP Response Message – ▪ **Mark Up Languages :** Introduction to HTML - Basic XHTML Syntax and Semantics – ▪ Some Fundamental HTML Elements - Lists - Tables - Frames – Forms – Defining XHTML'S abstract Syntax: XML.	15	Chalk & Talk , Spot Test , Demo Coding	J.chinna dalix
Aug 2022	II	▪ **Style Sheets: CSS** - Introduction to CSS – CSS Features -CSS Core Syntax - Style sheets and HTML - Style Rule Cascading and Inheritance . ▪ **Client - side Programming** - Introduction to JavaScript - JavaScript in Perspective – ▪ Basic Syntax - Variables and Data Types - Statements -Operators - Literals -Functions - Objects - Arrays – Building –in Objects.	15	Chalk & Talk, Spot Test , Demo Coding	dalix J.chinna

Sep 2022	III	• **Host Objects: Browsers and DOM** - Introduction to DOM – The Document tree • **Server side Programming – Java Servlets** - Servlet Architecture Overview - A 'Hello World' Servlet – • Servlet Generating Dynamic Content – Servlet Life Cycle - Parameter Data – Sessions - Cookies – URL Rewriting	15	Chalk & TalkDemo Coding
Oct 2022	IV	• **Representing Web Data :XML** - XML Documentations and Vocabularies – XML versions and the XML Declarations • XML Namespaces - Event Oriented Parsing: SAX - Transforming XML Documents • **Separating programming presentation: JSP** – Introduction to JSP - JSP and Servlets – Running JSP Applications - Basic JSP - JavaBeans Classes and JSP	15	Chalk & Talk, Assignment , Demo Coding
Nov 2022	V	• **Enterprise JavaBeans: The Big Picture:** Introduction – Transaction Processors-Two-Tier - Client-Server Architecture - Three-Tier Architecture - Distributed Transaction Processing - EJB's Role. • **EJB's Architecture:** Logical Architecture – Overview of EJB's Architecture • A High-Level View of an EJB Conversation – RMI Clients - CORBA Clients - Building and Deploying EJBs	15	Students Seminar

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LESSON PLAN
2022-2023

Class : II MCA
Sub. Code : 21OMC32
Title of the Paper : Python Programming
Total Hours : 75 hrs

Month	Units	Description	Hrs.	Mode of Teaching	Course Teacher Signature
July 2022	1	• Introduction to Python: Python - Features of Python - Execution of a Python Program - Viewing the Byte Code - Flavors of Python • Python Virtual Machine(PVM): Datatypes in Python: Comments in Python - Docstrings - Datatypes in Python - Built-in datatypes - bool Datatype • Sequences in Python - Sets - Literals in Python - User-defined Datatypes - Constants in Python. Operators in Python: Operator - Arithmetic Operators • Assignment Operators - Unary Minus Operators - Relational Operators - Logical Operators - Boolean Operators - Membership Operators - Identity Operators - Operator Precedence and Associativity	15	Chalk & Talk, PPT	S Vijaya S VIJAYA SANKARI

Aug 2022	II	• Input and Output: Output statements - Input statements - Command Line Arguments. Control Statements: Control Statements - The if Statement - The if…else Statement – The if…elif…else Statement– • The while loop - the for loop - Infinite Loops -Nested Loops - The else Suite - The break Statement - The continue Statement - the pass Statement - The assert Statement • The return Statement. Arrays in Python: Array - Advantages of Arrays - Creating an Array - Types of Arrays– • Comparing Arrays - Aliasing the Arrays -Viewing and Copying Arrays - Dimensions of Arrays - Attributes of an Array.	15	Chalk & Talk, PPT *S.Vijaya* *S. VIJAYA* *SANGARI*
Sep 2022	III	• Strings and Characters: Creating Strings - Length of a String - Indexing in Strings - Slicing the Strings - Repeating the Strings - Concatenation of Strings - Checking Membership - Comparing Strings - Removing Spaces from a String • Finding Sub Strings -Counting Substrings in a String - Strings are Immutable - Replacing a String with another String - Splitting and joining Strings - Changing Case of a String - Checking starting and Ending of a String – • String Testing Methods - Formatting the Strings - Working with Characters - Sorting String - Searching in the Strings - Finding Number of Characters and Words - Inserting Sub String into a String. Functions: • Difference between a Function and a Method - defining a Function - Calling a Function – returning Results from a Function-Returning Multiple values from a Function • Lists and Tuples: List-Creating Lists using range() Function - Updating the Elements of a List –	15	PPT *S.Vijaya* *S. VIJAYA* *SANGARI*

		• Concatenation of Two Lists –Tuples -Creating Tuples -Accessing the Tuple Elements - Basic Operations on Tuples – Functions to Process Tuples		
Oct 2022	IV	• Classes and Objects: Creating a Class – Constructor- types of Variables – Namespaces - Types of Methods - Passing Members of One Class to Another Class • Inner Classes. Inheritance and Polymorphism: Constructors in Inheritance - Overriding Super Class Constructors and Methods - The super() Method – • Types of Inheritance – Method Resolution Order(MRO) – Polymorphism – Operator Overloading – Method Overloading – • Method Overriding - Abstract Classes and Interfaces: Abstract Method and Abstract Class – interfaces in Python – Abstract classes vs Interfaces .	15	Chalk & Talk, PPT S. Vijaya S VIJAYA SANKARI
Nov 2022	V	• Files in Python: Files - Types of Files in Python – Opening a File – Closing a file – Working with Text Files Containing Strings - Knowing whether a File exists or not • Working with Binary Files - The with statement - The seek() and tell() Method - Random Accessing of binary Files. Python's database connectivity: DBMS - Advantages of a DBMS over Files • Types of databases used with Python – Installation of MySQL Database Software – Verifying the MySQL in the Windows Operating System • Working with MySQL Database – Using MySQL from Python- Retrieving All Rows from a Table – Inserting Rows into a Table • Deleting Rows from a Table – Updating Rows in a Table – Creating Database Tables through Python.	15	Seminar, PPT S. Vijaya S VIJAYA SANKARI

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LESSON PLAN
2022-2023

Class : II MCA (III Semester)

Sub. Code : 21OMC33

Title of the Paper : Data Communications and Networking

Total Hours : 60 hrs

Month	Units	Description	Hrs.	Mode of Teaching	Course Teacher Signature
July 2022	I	■ **Introduction**: Data Communications – Networks ■ Networks Types – Standards and Administration. ● **Network Models :** Protocol Layering - TCP/IP Protocol Suite - The OSI Model	12	Chalk & Talk, PPT	H. me M-MURUGES WARI
Aug 2022	II	■ **Bandwidth Utilization: Multiplexing and Spectrum Spreading:** Multiplexing. ■ **Transmission Media** : Guided Media - Unguided Media : Wireless . ● **Switching** : Circuit-Switched Networks - Packet Switching	12	Chalk & Talk, PPT	H. N M-MURUGU WARI
Sep 2022	III	■ **Error Detection and Correction:** Introduction - Block Coding - Cyclic Codes - Checksum. ■ **Wired LANs: Ethernet:** Ethernet Protocol. ● **Other Wireless Networks :** Cellular Telephony - Satellite Networks	12	Chalk & Talk	H. N M-MURUGB WARI
Oct 2022	IV	■ **Network Layer: Introduction to Network Layer :** Network-Layer Services – Network Layer Performance ■ IPV4 Addresses : – Address Space – Classful Addressing – Classless Addressing **Unicast Routing :** Routing Algorithms , Unicast Routing Protocols - Routing	12	PPT, Group Discussion	H. N M-MURUGES WARI

		Information Protocol(RIP) . **Multicast Routing :** Multicasting Basics.			
Nov 2022	V	▪ **Transport Layer : Introduction to Transport Layer :** Introduction – Transport – Layer Protocols. ▪ **Transport–Layer Protocols** : User Datagram Protocol - , Transmission Control Protocol : – TCP Services , TCP Features – Segment – A TCP Connection – Flow Control – Error Control . **Standard Client-Server Protocols :** Domain Name System(DNS)	12	Student's Seminar	M. Nee M. MURUGE WARI

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LESSON PLAN
2022-2023

Class   : II MCA (III Semester)
Sub.Code   : 21OMCE3B
Title of the Paper : Internet Of Things
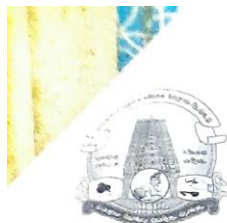Total Hours   : 75 hrs.
Name   : k.Krishnaveni

Month	Units	Description	Hrs.	Mode of Teaching	Course Teacher Signature
July 2022	I	Introduction to Internet of Things: Introduction – Physical Design of IoT - Logical Design of IoT - IoT Enabling Technologies - IoT Levels & Deployment Templates.	15	Chalk & Talk PPT	Φ. doishu (k.krishnaveni)
Aug 2022	II	Domain Specific IoTs: Introduction – Home Automation - Cities-Environment -Energy – Retail – Logistics – Agriculture – Industry - Healthy & Lifestyle. IoT and M2M: Introduction - M2M - Difference between IoT and M2M - SDN and NFV for IoT.	15	Chalk & Talk	Φ. doishnaveni (k.krishnaveni)
Sep Apr2022	III	IoT System Management with NETCONF-YANG: Need for IoT Systems Management - NETCONF- YANG - IoT Systems Management with NETCONF - YANG. IoT Platforms Design Methodology: Introduction – IoT Design. Methodology. Case Studies IoT Design: Introduction – Home Automation – Cities	15	Chalk & Talk	Φ. doishu (k.krishnaveni)

Oct 2022	IV	Event Handling: The Delegation Event Model – Event Classes – Sources of Events – Event Listener Interfaces . Introducing the AWT : Working With Windows , Graphics and Text : AWT Classes - Window Fundamentals – Introducing Graphics - Working with Color . Using AWT Controls, Layout Managers and Menus : Labels - Using Buttons – Applying Check Boxes - Using Lists - Using a TextField -Using a TextArea – Understanding Layout Managers.	15	PPT, Group Discussion Chalk & Talk PPT,	கி. கிருஷ்ண (K. krishnaveni)
Nov 2022	V	Introducing GUI Programming with Swing: Introducing Swing: Components and Containers - The Swing Packages - A Simple Swing Application. Java Beans: What Is a Java Beans– Advantage of Java Beans – The Java Beans API. Introducing Servlets: The Life Cycle of a Servlet – Servlet Development Options - A Simple Servlets – The Servlets API.	15	Student's Seminar	கி. கிருஷ்ண (K. krishnaveni)

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LESSON PLAN
2022-2023

Class   : II MCA (IV Semester)

Sub. Code   : 21OMC41

Title of the Paper : Big Data Analytics

Total Hours   : 60 hrs

Month	Units	Description	Hrs.	Mode of Teaching	Course Teacher Signature
Dec 2022 & Jan 2023	I	**Types of Digital Data:** Classification of Digital Data – Structured data – Semi-Structured Data – Unstructured Data **Introduction of Big Data** – Characteristics of Data – Evolution of Big Data – Definition of Big Data – Challenges with Big Data – What is Big Data'? – **Big Data Analytics:** Where do we Begin? – What is Big Data Analytics? What Big Data Analytics Isn't? – Why this sudden Hype around Big data Analytics? – Classification of Analytics - Top challenges facing Big Data – Why is Big Data Analytics Important? – Data Science - Terminologies Used in Big Data Environment.	12	Chalk & Talk	M·M M. MURUGU WARI
Jan 2023	II	**The Big Data Technology Landscape** - NoSQL – Hadoop - **.Introduction to Hadoop :** Introduction to Hadoop – Why Hadoop? -Why not RDBMS? RDBMS versus Hadoop – Distributed Computing Challenges - History of Hadoop - Hadoop Overview - Use case of Hadoop - Hadoop Distributors HDFS – Processing Data with Hadoop – Managing Resources and Applications with Hadoop YARN – Interacting with Hadoop Ecosystem.	12	PPT	M·M M. MURUGES WARI

Feb 2023	III	**Introduction to MongoDB:** What is MongoDB? - Why MongoDB? – Terms Used in RDBMS and MongoDB Data Types in MongoDB – **Introduction to Cassandra:** Apache Cassandra – An Introduction Features of Cassandra – Collections – Alter Commands – Import and Export – Querying System Tables.	12	Chalk & Talk	*M. Nue* *M. MURUGE WARI*
Mar 2023	IV	**Introduction to MAPREDUCE Programming:** Introduction – Mapper – Reducer – Combiner Partitioner - Searching – Sorting – Compressing – **Introduction to Hive:** What is Hive? – Hive Architecture Hive Data Types – Hive File Format – Hive Query Language(HQL)	12	PPT, Group Discussion Chalk & Talk	*M. Me* *M. MURUGA WARI*
Apr 2023	V	**Introduction to Pig:** What is Pig? - The Anatomy if Pig – Pig on Hadoop – Data Types in Pig Running Pig – Execution Modes of Pig – HDFS Commands – Eval Functions – Complex Data Types **Introduction to Machine Learning** – Introduction to Machine Learning - Machine Learning Algorithms.	12	Student's Seminar	*M. Me* *M. MURUGE WARI*

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LESSON PLAN
2022-2023

Class : II MCA
Sub. Code : 21OMC42
Title of the Paper : Mobile Computing
Total Hours : 75 hrs

Month	Units	Description	Hrs.	Mode of Teaching	Course Teacher Signature
Dec 2022 & Jan 2023	I	• Applications - A Short History of Wireless Communication – • Some Open Research Topics - A Simplified Reference Model. • Wireless Transmission: Frequencies for radio transmission – Signals – Antennas– Multiplexing.	15	Chalk & Talk	S. Vijaya S. VIJAYA SANKARI
Jan 2023	II	• Telecommunication Systems: GSM - Mobile services – System Architecture – Radio interface DECT • System architecture – Protocol architecture – TETRA. • Satellite Systems: History – Applications – Basics : GEO 173 – LEO 174 – MEO 175 – Routing – Localization - Handover.	15	PPT	S. Vijaya S VIJAYA SANKARI
Feb 2023	III	• Wireless LAN: IEEE 802.11 – System architecture- Protocol architecture - Physical layer • Medium access control layer – MAC management – HIPERLAN – Historical : HIPERLAN 1 - WATM – BRAN • HiperLAN2- Bluetooth - User scenarios – Architecture – Radio layer – Baseband layer – Link manager protocol.	15	Chalk & Talk, PPT	S. Vijaya S. VIJAYA SANKARI

Mar 2023	IV	• Mobile Network Layer: Mobile ad-hoc networks – Routing – Destination sequence distance vector • Dynamic source routing – Alternative metrics – Overview ad-hoc routing protocols. Support for Mobility: Wireless application protocol (version 1.x) - Architecture • Wireless datagram protocol – Wireless transport layer security – Wireless transaction protocol – Wireless session protocol- Wireless application environment – • Wireless markup language – WMLScript – Wireless telephony application – Push architecture- Push/Pull services.	15	Chalk & Talk, PPT	S. Vijaya S. VIJAYA SANKARI
Apr 2023	V	• Getting Started with Android programming: Basics of Android – Obtaining the Required Tools • Creating Your First Android Application – Anatomy of an Android Application. Activities, Fragments, and Intents: Understanding Activities • Linking Activities Using Intents – Fragments – Calling Built- In Applications Using Intents – Displaying Notifications.	15	Seminar, PPT	S. Vijaya S. VIJAYA SANKARI

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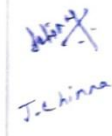E.M.G. YADAVA WOMEN'S COLLEGE
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LESSON PLAN
2022-2023

Class   : II MCA (IV Semester)
Sub. Code   : 21OMCE4B
Title of the Paper : Cloud Computing
Total Hours   : 75 hrs

LESSON PLAN:

Month	Units	Description	Hrs.	Mode of Teaching	Course Teacher Signature
Dec 2022	I	• **Era of Cloud Computing** : Getting to know the Cloud – Components of Cloud Computing – Cloud Types –Private , Public and Hybrid , Cloud Computing Service Delivery Models • **Cloud Computing Services** – Infrastructure as a Service(IaaS) – Platform as a Service(PaaS) – Leveraging PaaS for Productivity – Software as a Service(SaaS) – Database as a Service(DBaaS) – Specialized Cloud Services. • **Cloud Types and Models** – Private Cloud – Components of a Private Cloud – Community Cloud – Public Cloud – Public Cloud – Hybrid Clouds. Cloud Deployment Techniques –Cloud Network Topologies – Automation for Cloud Deployments – Self-Service Features in a Cloud Deployment – Federated Cloud Deployments – Cloud Performance – Impact of Memory on Cloud Performance – Improving Cloud Database Performance .	15	Chalk & Talk , SpotTest , Demo Coding	J.chinna

Jan 2023	II	• **Cloud Computing and Business Value** : Key Drivers for Cloud Computing – Cloud Computing and Outsourcing – Types of Scalability – Distribution over the Internet

• **Demsystifying Cloud Computing** : Myths and Truths – **Recent Trends in Cloud Computing and Standards** : Recent Trends in – Conflict of Interest for Public Cloud and IT Product Providers – Cloud Compliance – BYOD and Encryption Exposures – Cloud Standards – Cloud Ratings – Cloud Computing Trends that are Accelerating Adoption .

• **Data Security in the Cloud** : Challenges with Cloud Data - Challenges with Data Security – Data Confidentiality and Encryption – Data Availability – Data Integrity – Cloud Data Management Interface – Cloud Storage Gateways(CSGs) – Cloud Firewall – Virtual Firewall. | 15 | Chalk & Talk, Spot Test, Demo Coding |
| Feb 2023 | III | • **Application Architecture for Cloud** : Cloud Application Requirements – Architecture for Traditional Versus Cloud Applications – Fundamental Requirements for Cloud Application Architecture –

• Use of Client-Server Architecture for Cloud Applications – Addressing Cloud Application Performance and Scalability –Service Oriented Architecture (SOA) for Cloud Applications – Parallelization within Cloud Applications.

• **Cloud Programming :** Programming Support for Google Apps Engine – Programming Support for Amazon EC2

• **Migrating Applications to the Cloud** : Cloud Migration Techniques – Phase during Migration of an Application to the cloud – Cloud emulators and its use for Application Testing and Migration. | 15 | Chalk & Talk , Spot Test, Demo Coding |

Mar 2023	IV	**SLA with Cloud Service Providers** : The Concept of an SLA , SLA aspects and requirements – Service Availability – Cloud Outages – Credit Calculation for SLA Breaches – Sample SLA **Introducing Virtualization** : Introducing Virtualization and its benefits – Implementation Levels of Virtualization – Virtualization at the OS Level –Virtualization Structure – Virtualization Mechanisms – Open Source Virtualization Technology – Xen Virtualization Architecture **Binary Translation with full Virtualization** – Paravirtualization with Compiler Support – Virtualization of CPU , Memory and I/O Devices , Hardware Support for Virtualization in Intex x86 Processor – Virtualization in Multicore Processors	15	Chalk & Talk, Assignment , Demo Coding
Apr 2023	V	• **Application Development for Cloud** : Developing On-Premise Versus Cloud Applications – Modifying Traditional Application for Deployment in the Cloud – Stages during the Development Process of Cloud Application – Managing a Cloud Application – Using Agile Software Development for Cloud Applications – Static Code Analysis for Cloud Applications – Developing Synchronous and Asynchronous Cloud Applications. • **Application Security in the Cloud** : Cloud Application Software Development Lifecycle(SDLC) – Cloud Service Reports by Providers – Application Security in an IaaS Environment - Application Security in an PaaS Environment - Application Security in an SaaS Environment . • **Mobile Cloud Computing** : Definition of Mobile Cloud Computing – Architecture of Mobile Cloud Computing – Benefits of Mobile Cloud Computing - Mobile Cloud Computing Challenges .	15	Students Seminar

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