

E.M. GOPALAKRISHNA KONE YADAVA WOMEN'S COLLEGE

**An Autonomous Institution -Affiliated to Madurai Kamaraj University
Re-accredited (3rd Cycle) with Grade A⁺ & CGPA 3.51 by NAAC**



**LESSON PLAN
2023-2024**

DEPARTMENT OF COMPUTER SCIENCE

**(UG – Odd & Even Semester)
Data Science & Analytics**








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LESSON PLAN
2023-2024

Sub. Code : 23OUCSD11
Title of the Paper : Python Programming
Total Hours : 60

Class: I B.Sc CS(DS)

Month	Unit	Description of the Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
June 2023	I	Basic of Python Programming: History of Python-Features of Python-Literal-Constants-Variables-Identifiers-Keywords-Built-in Data Types-Output Statements - Input Statements-Comments - Indentation- Operators- Expressions-Type conversions. Python Arrays: Defining and Processing Arrays - Array methods.	12Hrs	Chalk & Talk	 (Mrs.R.Keerthana)
July 2023	II	Control Statements: Selection/Conditional Branching statements: if, if-else, nested if and if-elif-else statements. Iterative Statements: while loop, for loop, else suite in loop and nested loops. Jump Statements: break, continue and pass statements.	12Hrs	Chalk & Talk	 (Mrs.R.Keerthana)
August 2023	III	Functions: Function Definition - Function Call - Variable Scope and its Lifetime-Return Statement. Function Arguments: Required Arguments, Keyword Arguments, Default Arguments and Variable Length Arguments-Recursion. Python Strings: String operations-	12Hrs	Chalk & Talk	 (Mrs.R.Keerthana)

		Immutable Strings - Built-in String Methods and Functions - String Comparison. Modules: import statement- The Python module - dir() function - Modules and Namespace - Defining our own modules.			
September 2023	IV	Lists: Creating a list -Access values in List-Updating values in Lists-Nested lists - Basic list Operations-List Methods. Tuples: Creating, Accessing, Updating and Deleting Elements in a tuple - Nested tuples- Difference between lists and tuples. Dictionaries: Creating, Accessing, Updating and Deleting Elements in a Dictionary - Dictionary Functions and Methods - Difference between Lists and Dictionaries.	12Hrs	Chalk & Talk	 (Mrs.R.Keerthana)
October 2023	V	Python File Handling: Types of files in Python - Opening and Closing Files-Reading and Writing files: write () and writelines () methods-append () method - read () and readlines () methods - with keyword - Splitting words - File methods - File Positions- Renaming and deleting files.	12Hrs	Chalk & Talk	 (Mrs.R.Keerthana)



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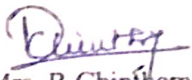
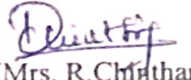
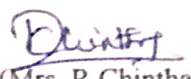
LESSON PLAN
2023-2024


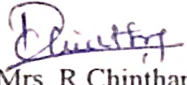
Sub. Code : 230UCSDSECN1

Semester : I

Title of the Paper : Fundamentals of Information Technology

Total Hours : 30

Month	Unit	Description of the Syllabus	Class	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
June 2023	I	Introduction to Computers: Introduction, Definition, Characteristics of computer, Evolution of Computer, Block Diagram of a computer, Generations of Computer, Classification Of Computers, Applications of Computer, Capabilities and limitations of Computer.	I Year	5Hrs	Chalk & Talk	 (Mrs. R.Chinthamani)
July 2023	II	Basic Computer Organization: Role of I/O devices in a computer system. Input Units: Keyboard, Terminals and its types. Pointing Devices, Scanners and its types, Voice Recognition Systems, Vision Input System, Touch Screen, Output Units: Monitors and its types. Printers: Impact Printers and its types. Non-Impact Printers and its types, Plotters, types of plotters, Sound cards, Speakers.	I Year	5Hrs	Chalk & Talk	 (Mrs. R.Chinthamani)
August 2023	III	Storage Fundamentals: Primary Vs Secondary Storage, Data storage & retrieval methods. Primary Storage: RAM ROM, PROM, EPROM, EEPROM. Secondary Storage: Magnetic Tapes, Magnetic Disks. Cartridge tape, hard disks, Floppy disks Optical Disks, Compact Disks, Zip Drive, Flash Drives.	I Year	5Hrs	Chalk & Talk	 (Mrs. R.Chinthamani)

September 2023	IV	Software: Software and its needs, Types of S/W. System Software: Operating System, Utility Programs Programming Language: Machine Language, Assembly Language, High Level Language their advantages & disadvantages. Application S/W and its types: Word Processing, Spread Sheets Presentation, Graphics, DBMS s/w.	I Year	5Hrs	Chalk & Talk	 (Mrs. R. Chinthamani)
October 2023	V	Operating System: Functions, Measuring System Performance, Assemblers, Compilers and Interpreters. Batch Processing, Multiprogramming, Multi-Tasking, Multiprocessing, Time Sharing, DOS, Windows, Unix/Linux.	I Year	5Hrs	Chalk & Talk	 (Mrs. R. Chinthamani)



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LESSON PLAN



2023-2024




Sub. Code : 23OUCSDFC1

Class: I B.Sc.,CS(DS)

Title of the Paper : Problem Solving Techniques

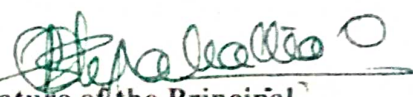
Total Hours : 30

Month	Unit	Description of the Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
June 2023	I	Introduction: History, characteristics and limitations of Computer. Hardware/Anatomy of Computer: CPU, Memory, Secondary storage devices, Input Devices and Output devices. Types of Computers: PC, Workstation, Minicomputer, Main frame and Supercomputer. Software: System software and Application software. Programming Languages: Machine language, Assembly language, High-level language, 4 GL and 5GL Features of good programming language. Translators: Interpreters and Compilers.	5Hrs	Chalk & Talk	 (Mrs.R.Keerthana)
July 2023	II	Data types, Input, Processing of data, Arithmetic Operators, Hierarchy of operations and Output. Different phases in Program Development Cycle (PDC). Structured Programming: Algorithm: Features of good algorithm, Benefits and drawbacks of algorithm. Flowcharts: Advantages and limitations	5Hrs	Chalk & Talk	 (Mrs.R.Keerthana)

		of flowcharts, when to use flowcharts, flowchart symbols and types of flowcharts. Pseudocode: Writing a pseudocode. Coding, documenting and testing a program: Comment lines and types of errors. Program design: Modular Programming.			
August 2023	III	Selection Structures: Relational and Logical Operators - Selecting from Several Alternatives - Applications of Selection Structures. Repetition Structures: Counter Controlled Loops -Nested Loops- Applications of Repetition Structures.	5Hrs	Chalk & Talk	 (Mrs. R. Keerthana)
September 2023	IV	Numeric Data and Character Based Data. Arrays: One Dimensional Array - Two Dimensional Arrays - Strings as Arrays of Characters.	5Hrs	Chalk & Talk	 (Mrs. R. Keerthana)
October 2023	V	Data Flow Diagrams: Definition, DFD symbols and types of DFDs. Program Modules: Subprograms- Value and Reference parameters- Scope of a variable - Functions Recursion. Files: File Basics-Creating and reading a sequential file- Modifying Sequential Files.	5Hrs	Chalk & Talk	 (Mrs. R. Keerthana)



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LESSON PLAN
2023-2024



Sub. Code : 23OUCSD21

Class: I B.Sc.,CS(DS)

Title of the Paper : Data Structures & Algorithms

Total Hours : 60

Month	Unit	Description of the Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
December 2023	I	Arrays and ordered Lists: Abstract data types – asymptotic notations – complexity analysis- Linked lists: Singly linked list – doubly linked lists - Circular linked list, General lists-stacks – Queues – Circular Queues – Evaluation of expressions.	12Hrs	Chalk & Talk	 (Mrs.R.Keerthana)
January 2024	II	Trees and Graphs: Trees – Binary Trees – Binary Tree Traversal – Binary Tree Representations – Binary Search Trees - threaded Binary Trees - Application of trees (Sets). Representation of Graphs – Graph implementation – graph Traversals - Minimum Cost Spanning Trees – Shortest Path Problems- Application of graphs.	12Hrs	Chalk & Talk	 (Mrs.R.Keerthana)
February 2024	III	Searching and Sorting Sorting: Bubble Sort, Insertion Sort, Quick Sort, Merge Sort, Selection Sort. Searching – Linear search, Binary search.	12Hrs	Chalk & Talk	 (Mrs.R.Keerthana)

February 2024	IV	Greedy Method and Dynamic programming Greedy Method: Knapsack problem- Job Sequencing with deadlines – Optimal storage on tapes. General method – Multistage Graph Forward Method- All pairs shortest path – Single source shortest path – Search Techniques for Graphs – DFS – Connected Components – Bi-Connected Components.	12Hrs	Chalk & Talk	 (Mrs.R.Keerthana)
March 2024	V	Backtracking: General Method – 8-Queen"s – Sum Of Subsets – Graph Colouring – Hamiltonian Cycles – Branch And Bound: General Method – Travelling Sales Person Problem.	12Hrs	Chalk & Talk	 (Mrs.R.Keerthana)



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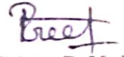
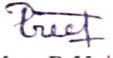
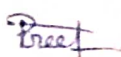


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LESSON PLAN
2023-2024

Sub. Code : 230UCSDSECN2
Title of the Paper : Computer Fundamentals
Total Hours : 30

Semester : II

Month	Unit	Description of the Syllabus	Class	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
December 2023	I	Introduction to Computers - Generations of Computer – Data and Information – Components of Computer – Software – Hardware – Input Devices - Output Devices – Types of Operating System.	I Year	5Hrs	Chalk & Talk	 (Mrs. P.Krishna Geetha)
January 2024	II	MS Word: Introduction – Elements of Window – Files, Folders and Directories – Text Manipulating: Cut, Copy, Paste, Drag and Drop – Text Formatting: Font – Style, Size, Face and Colors (Both foreground and background) – Alignment - Bullets and Numbering - Header and footer- watermark – inserting objects (images, other application document) – Table creation – Mail merge.	I Year	5Hrs	Chalk & Talk	 (Mrs. P.Krishna Geetha)
February 2024	III	MS Excel: Introduction – Inserting rows and columns – Sizing rows and columns – Implementing formulas – Generating series - Functions in excel – Creation of Chart – Inserting objects – Filter –	I Year	5Hrs	Chalk & Talk	 (Mrs. P.Krishna Geetha)

		Sorting – Inserting worksheet.				
March 2024	IV,V	<p>MS PowerPoint: Introduction – Slides Manipulation (Inserting new, Copy, paste, delete and duplicate slides) – Slide show– Types of Views – Types of Animations – Inserting Objects – Implementing multimedia (Video and Audio) – Templates (Built-in and User-Defined).</p> <p>Internet: Introduction to Internet and Intranet – Services of Internet - Domain Name – URL – Browser – Types of Browsers – Search Engine - E-Mail – Basic Components of E-Mail – .How to send group mail.</p> <p>E-Commerce: Digital Signature – Digital Currency – Online shopping and transaction.</p>	I Year	5Hrs	Chalk & Talk	<p><i>Preet</i> (Mrs. P.Krishna Geetha)</p>

N. K. K.
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P. Geetha
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