

**E.M. GOPALAKRISHNA KONE YADAVA WOMEN'S COLLEGE**

**An Autonomous Institution -Affiliated to Madurai Kamaraj University**

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**LESSON PLAN**

**2023-2024**

**DEPARTMENT OF IT**

**(UG & PG – Even Semester)**



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**LESSON PLAN**  
**2023-2024**

Sub. Code : 23OUIT21

Class : I B.Sc. IT


Title of the Paper: JAVA PROGRAMMING AND DATA STRUCTURE Semester : II

Total Hours : 75

Month	Unit	Description of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher
December '23	I	<p><b>Introduction to Data Structures:</b> Data Structures: Definition- Time &amp; Space Complexity, Arrays, Linear list: Singly linked list implementation, STACKS and QUEUES Operations, array and linked representations of stack, stack applications, Queues: operations on queues, array and linked representations. <b>Circular Queue:</b> operations, Trees: Definitions and Concepts-Representation of binary tree, Binary tree traversals.</p> <p><b>Fundament also of Object-Oriented Programming:</b> Introduction–Object Oriented Paradigm–Concepts of Object–Oriented Programming–Benefits of OOP–Evolution: Java History–Java Features–Differs from C and C++- Overview of Java Language: Java Program–Structure–Tokens–Java Statements–Java Virtual Machine–Command Line Arguments.</p>	15	Chalk and Talk, PPT, quiz, on the spot test	Ms.D.Karthika
January '24	II	Constants, Variables and Data Types–Operators and Expressions– <b>Decision making and Branching</b> –Looping– Arrays - Strings – Collection Interfaces and classes.	15	Chalk and Talk, PPT, quiz, on the spot test	Ms.D.Karthika
February '24	III	<p><b>Classes objects and methods:</b> Introduction – Defining a class – Method Declaration –Constructors - Method Overloading – Static Members – Nesting of methods – Inheritance –Overriding– Final variables and methods– Abstract methods and classes.</p>	15	Chalk and Talk, PPT, quiz, on the spot test	Ms.D.Karthika

March '24	IV	<b>Multiple Inheritance:</b> Defining Interfaces-Extending Interfaces-Implementing Interfaces - Packages: Creating Packages - Accessing Packages - Using a Package - Managing Errors and Exceptions-Multithreaded Programming. Layout Managers -JDBC - Java Servlet: - Servlet Environment Role - Servlet API -Servlet Life Cycle.	15	Chalk and Talk, PPT, quiz, on the spot test	Ms.D.Karthika
March '24	V	<b>Layout Managers -JDBC - Java Servlet: - Servlet Environment Role - Servlet API - Servlet Life Cycle -Servlet Context-HTTP Support-HTML to Servlet Communication.</b>	15	Seminar, PPT presentation , Activity and Model Preparation	Ms.D.Karthika

  
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**LESSON PLAN**  
**2023-2024**

**Sub. Code : 23OUITDSE2**

**Class : I B.Sc. IT**


**Title of the Paper: BIG DATA ANALYTICS**


**Semester : II**

**Total Hours : 75**

Month	Unit	Description of The Syllabus	Hours Allotted	Teaching Mode & Methods	Course Teacher
Dec '23	I	<b>Data Explosion and Big Data Analytics:</b> An Overview: Introduction, Evolution of Database Technology and Big Data, Elements of Big Data, Big Data System Components, Big Data Analytics – Data Analytics. Types of Big Data Analytics, Applications of Big Data Technology, Challenges and Skills required with Big Data Technology	15	Chalk and Talk, PPT, quiz, on the spot test	Ms. M.Srimathi
Jan'24	II	<b>Analytical Theory:</b> Introduction about Classification Algorithms, Regression Techniques, Domain Specific Analytic Techniques: In Database Analytics, Text Analytics. <b>Real – Time Analysis:</b> Introduction: Real-time System, Types of Real-time System, Characteristics of Real-time Systems, Real-time Processing Systems for Big Data: Introduction, Data Integration and Analytics, Big Data Engine-Hadoop, Real-time System Architecture, Real-time Data Analytics.	15	Chalk and Talk, PPT, quiz, on the spot test	Ms.J.Kaleeswari
Feb '24	III	<b>Big Data: Hardware, Technology Foundations:</b> Introduction, Big Data Stack, Virtualization and Big Data. <b>Understanding NoSQL and Hadoop Ecosystem:</b> Introduction, NoSQL: CouchDB, MongoDB, Hadoop Ecosystem – HDFS, HBase, Yarn.	15	Chalk and Talk, PPT, quiz, on the spot test	J.Kaleeswari
Mar' 24	IV	<b>High Dimensional Data: A Big Data Perspective:</b> Introduction – What is Dimensionality? Dimensionality Reduction: Approaches for Dimensionality Reduction, Dimensionality Reduction Techniques. <b>User Interface and Visualization:</b> Desirable Properties, Visualization Techniques. <b>R Programming Basics:</b> Introduction, Data Types, Data Structures and Operators – Basic Data Types in R, R Operators, Vectors, List, Factor, Arrays and Matrix, Data Frame, R Programming Structure – Control Statements of R: if, if-else, if-else ladder, Switch-Case, Return, Loops and Loop Control Statements.	15	Chalk and Talk, PPT, quiz, on the spot test	M.Aysha Fathima

April 24	V	<p><b>R Programming:</b> Input / Output: Import and Export Data, Handling Missing Values, Statistical Functions and Models of R, R Graphics and Data Visualization.</p> <p><b>Case Study:</b> K Means Clustering Algorithm Implementations, Decision Tree Algorithm Implementations, Association Rule Mining Algorithm Implementations, Naïve Bayes Classification Algorithm Implementation, Build the Regression models, Constructing Directed Graph using Adjacency matrix.</p>	15	Seminar, PPT presentation, Activity and Model Preparation	M.Aysha Fathima
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## LESSON PLAN

2023-2024

Class: I B.Sc. IT Semester : II Sub. Code : 23OUTSECN2  
Title of the Paper: Advanced Excel Total Hours : 75

Month	UNIT	Details	No. of Hours	Mode of Teaching	Course Teacher
June' 23	I	<b>Unit I:</b> Basics of Excel- Customizing common options- Absolute and relative cells- Protecting and un-protecting worksheets and cells- Working with Functions - Writing conditional expressions - logical functions - lookup and reference functions.	6	Chalk and Talk, PPT	Mrs. G.Amudha G.A.H.
July'23	II	<b>Unit II:</b> Data Validations - Specifying a valid range of values - Specifying a list of valid values- Specifying custom validations based on formula - Sorting and Filtering Data -Sorting tables- multiple-level sorting- custom sorting- Filtering data for selected view - advanced filter options - Working with Reports Creating subtotals - Multiple-level subtotal.	6	Chalk and Talk, PPT, quiz, on the spot test	Mrs. G.Amudha G.A.H.
Aug' 23	III	<b>Unit III:</b> More Functions Date and time functions - Text functions - Database functions- Power Functions - Formatting Using auto formatting option for worksheets- Using conditional formatting option for rows, columns and cells- What If Analysis - Goal Seek- Data Tables- Scenario Manager.	6	Chalk and Talk, PPT, quiz, on the spot test	Mrs. G.Amudha G.A.H.
Sep '23	IV	<b>Unit IV:</b> Charts - Formatting Charts- 3D Graphs- Bar and Line Chart together - Secondary Axis in Graphs- Sharing Charts with PowerPoint / MS Word, Dynamically- New Features Of Excel Spark lines, Inline Charts, data Charts- Overview of all the new features.	6	Chalk and Talk, PPT, Discussion	Mrs. G.Amudha G.A.H.
Oct '23	V	<b>Unit V:</b> Creating Pivot tables Formatting and customizing Pivot tables- advanced options of Pivot tables- Pivot charts- Consolidating data from multiple sheets and files using Pivot tables- external data sources- data consolidation feature to consolidate data - Show Value As % of Row, % of Column, Running Total, Compare with Specific Field- Viewing Subtotal under Pivot- Creating Slicers.	6	Assignment, PPT presentation, Discussion	Mrs. G.Amudha G.A.H.

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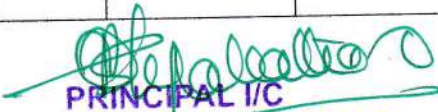
**LESSON PLAN**  
**2023-2024**

Sub. Code : 22OUI41  
 Title of the Paper: COMPUTER GRAPHICS

Class: : II B.Sc. IT  
 Semester : IV Total Hours : 75

Month	Unit	Description of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher
December '23	I	<b>A Survey of Computer Graphics:</b> Computer Aided Design – Presentation Graphics – Computer Art – Entertainment – Education and Training – Visualization – Image Processing – GUI. <b>Overview of Graphics Systems:</b> Video Display Devices- Raster Scan System – Random Scan System – Graphics Monitors and Workstations – Input Devices – Hard Copy Devices – Graphics Software.	15	Chalk and Talk, PPT, quiz, on the spot test	Ms. D.Karthika
January '24	II	<b>Output Primitives:</b> Points and Lines – Line Drawing Algorithms – Loading the Frame Buffer – Line function – Circle Generating Algorithms – Ellipse Generating Algorithms – Other Curves – Parallel Curve Algorithms – Curve Functions - Pixel Addressing – Filled Area Primitives –Fill Area Functions – Cell Array - Character Generation	15	Chalk and Talk, PPT, quiz, on the spot test	Ms. D.Karthika
February '24	III	<b>Attributes of Output Primitives:</b> Line Attributes – Curve Attributes – Color and Grayscale Levels – Area Fill Attributes – Character Attributes – Bundled Attributes – Inquiry Functions – Antialiasing.	15	Chalk and Talk, PPT, quiz, on the spot test	Ms. D.Karthika
March '24	IV	<b>Two Dimensional Geometric Transformation:</b> Basic Transformations- Matrix representations and Homogeneous Coordinates - Composite Transformations – Other Transformations – Transformations between coordinate systems – Affine Transformations –Transformation Functions – Raster Methods for Transformations	15	Chalk and Talk, PPT, quiz, on the spot test	Ms. D.Karthika
April '24	V	<b>Two Dimensional Viewing:</b> The Viewing Pipeline - Viewing Coordinate Reference Frame - Window to viewport Coordinate Transformation - Two Dimensional Viewing Functions- Clipping Operations – Point Clipping – Line Clipping (Cohen-Sutherland, Liang-Barshy, Nicholl Lee-Nicholl Line Clipping) – Polygon Clipping – Curve Clipping – Text Clipping – Exterior Clipping.	15	Seminar, PPT presentation, Activity and Model Preparation	Ms. D.Karthika

  
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**LESSON PLAN**  
**2023-2024**

Sub. Code : 22OUIT42

Class: : II B.Sc. IT

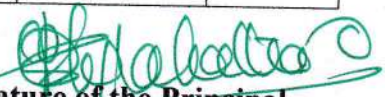
Title of the Paper: COMPUTER ORGANIZATION

Semester : IV

Total Hours : 75

Month	Unit	Description of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher
December '23	I	<b>Basic Structure of Computers and Machine Instructions:</b> Computer Types-Functional Units-Basic Operational Concepts-Memory Locations and Address-Memory Operations-Instruction Sequencing- Addressing modes-Stacks & Queues-Subroutines.	15	Chalk and Talk, PPT, quiz, on the spot test	Ms. M.Srimathi
January '24	II	<b>I/O Organization and Peripherals:</b> Accessing I/O Devices-Interrupts-Processor Examples-DMA-Buses-Interface Circuits- Standard I/O Interfaces.	15	Chalk and Talk, PPT, quiz, on the spot test	Ms. J.Kaleeswari
February '24	III	<b>Memory System and Storage Devices:</b> Basic Concepts- Semiconductor RAM Memories- Read Only Memories- Cache Memories-Speed, Size and cost- Cache Memories-Performance Considerations-Virtual memories- Memory Management Requirements -Secondary Storage Devices.	15	Chalk and Talk, PPT, quiz, on the spot test	Ms. J.Kaleeswari
March '24	IV	<b>Arithmetic and Processing Unit:</b> Addition and Subtraction of signed Numbers-Design of Fast Adders-Multiplication of Positive numbers-Signed Operand Multiplication- Fast Multiplication-Integer Division-Floating Point Numbers and Operations.	15	Chalk and Talk, PPT, quiz, on the spot test	Ms. M.Aysha Fathima
April '24	V	<b>Basic Processing Unit:</b> Some fundamental concepts -Execution of complete instructions-Multiple Bus Organization-Hardwired Control-Micro programmed Control- Pipelining basic Concepts-Data Hazards-Instruction Hazards.	15	Seminar, PPT presentation, Activity and Model Preparation	Ms. M.Aysha Fathima

  
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**LESSON PLAN**  
**2023-2024**

**Sub. Code : 21I61**

**Class : III B.Sc. IT**

**Title of the Paper: SOFTWARE ENGINEERING**

**Semester : VI**

**Total Hours : 75**

Month	Unit	Description of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher
December '23	I	Introduction to Software Engineering: Some Definitions - Some Size factors - Quality and productivity factors - Managerial Issues. Planning a software project: Defining the problem - Developing a Solution Strategy - Planning the Development Process - Planning an Organizational structure - Other Planning Activities.	15	Chalk and Talk, PPT, quiz, on the spot test	Ms.M.Sri mathi
January '24	II	Software Cost Estimation: Software Cost Factors - Software Cost Estimation Techniques - Staffing Level Estimation - Estimating software Maintenance costs.	15	Chalk and Talk, PPT, quiz,	Ms.J.Kale eswari
February '24	III	Software Requirements Definition: The software Requirements Specification - Formal Specification Techniques - Languages and Processors for Requirements Specifications.	15	Chalk and Talk, PPT, quiz, on the spot test	Ms.J.Kale eswari
March '24	IV	Software Design: Fundamental Design Concepts - Modules and Modularization Criteria - Design Notations - Design techniques - Detailed Design Considerations - Real time and distributed system Design - Test plans - Milestones, Walkthroughs and Inspection - Design Guidelines.	15	Chalk and Talk, PPT, quiz, on the spot test	Ms.M.Ays ha Fathima

March '24	V	<p>Verification and Validation Techniques: Quality Assurance - Static analysis -Symbolic Execution - Unit testing and Debugging - System Testing - Formal Verification.</p> <p>Software Maintenance: Enhancing Maintainability during Development - Managerial Aspects of Software Maintenance - Configuration Management - Source Code Metrics.</p>	15	Seminar, PPT presentation Activity and Model Preparation	Ms.M.Ays ha Fathima
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**LESSON PLAN**  
**2023-2024**

Sub. Code : 21I62  
 Title of the Paper: DATA MINING AND WAREHOUSING  
 Total Hours : 75

Class : III B.Sc. IT  
 Semester : VI

Month	Unit	Description of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher
December '23	I	<b>Introduction:</b> Data Mining – Data Mining on what kind of Data – What kind of Patterns can be Mined - Which Technologies are used - Which kind of applications are targeted - Major issues in Data Mining	15	Chalk and Talk, PPT, quiz, on the spot test	Ms.D.Karthika
January '24	II	<b>Data Preprocessing:</b> Data preprocessing an overview-Data cleaning-Data Reduction- Data Transformation and Data Discretization.	15	Chalk and Talk, PPT, quiz, on the spot test	Ms.D.Karthika
February '24	III	<b>Data Warehousing and On-Line Analytical Processing:</b> Data Warehouse Basic concepts - Data Warehouse modeling Data cube and OLAP - Data Warehouse design and usage - Data Warehouse implementation-Data generalization by attribute-oriented induction.	15	Chalk and Talk, PPT, quiz, on the spot test	Ms.D.Karthika
March '24	IV	<b>Classification Basic Concepts:</b> Basic Concepts - Decision Tree induction - Bayes classification methods - Rule-Based Classification - Model Evaluation and selection -Techniques to improve classification Accuracy.	15	Chalk and Talk, PPT, quiz, on the spot test	Ms.D.Karthika
April '24	V	<b>Cluster Analysis Basic concepts and Methods:</b> Cluster Analysis - Partitioning Methods - Hierarchical Methods - Density-Based Methods - Grid –Based Methods - Evaluation of Clustering.	15	Seminar, PPT presentation , Activity and Model Preparation	Ms.D.Karthika

  
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**LESSON PLAN**  
**2023-2024**


Sub. Code : 21IE6A

Class: : III B.Sc. IT

Title of the Paper: CLOUD COMPUTING

Semester: VI Total Hours : 75

Month	Unit	Description of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher
December '23	I	<b>Introduction to Cloud Computing:</b> Introduction – Characteristics of Cloud Computing – Cloud Models – Cloud-based Services & Applications. <b>Cloud Concepts &amp; Technologies:</b> Virtualization – Load Balancing – Scalability & Elasticity – Deployment – Replication – Monitoring – Software Defined Networking – Network Function Virtualization – MapReduce.	15	Chalk and Talk, PPT, quiz, on the spot test	Ms. D.Karthika
January '24	II	<b>Cloud Services &amp; Platforms:</b> Compute Services – Storage Services – Database Services – Application Services – Content Delivery Services. <b>Hadoop &amp; MapReduce:</b> Apache Hadoop – Hadoop MapReduce Job Execution – Hadoop Schedulers.	15	Chalk and Talk, PPT, quiz, on the spot test	Ms. D.Karthika
February '24	III	<b>Cloud Application Design:</b> Introduction – Design Considerations for Cloud Applications – Reference Architectures for Cloud Applications – Cloud Application Design Methodologies – Data Storage Approaches.	15	Chalk and Talk, PPT, quiz, on the spot test	Ms. D.Karthika
March '24	IV	<b>Python Basics:</b> Introduction – Python Data Types & Data Structures – Control Flow – Functions – Modules – Packages – File Handling – Date/Time Operations – Classes. <b>Python for Cloud:</b> Python for Amazon Web Services.	15	Chalk and Talk, PPT, quiz, on the spot test	Ms. D.Karthika
April '24	V	<b>Cloud Security:</b> Introduction – CSA Cloud Security Architecture – Authentication – Authorization – Identity & Access Management – Data Security. <b>Cloud for Industry, Healthcare &amp; Education:</b> Cloud Computing for Healthcare – Cloud Computing for Manufacturing Industry – Cloud Computing for Education.	15	Seminar, PPT presentation, Activity and Model Preparation	Ms. D.Karthika

  
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**LESSON PLAN**  
**2023-2024**

**Class : I M.Sc. IT**  
**Sub. Code : 23OPIT21**

**Semester :II**

**Title of the Paper : Database Systems Total Hours : 90**

Month & Year	UN IT	Course Content	No. of Hours	Mode of Teaching	Course Teacher
Dec '23	I	<b>Introduction:</b> Database System Applications - Purpose of Database Systems -View of Data - Database Users and Administrators. <b>Relational Database:</b> Structure of Relational Databases-Databases Schema- Keys-Schema Diagrams <b>Formal Relational Query Languages:</b> Relational Algebra-Tuple Relational Calculus.	18	Chalk and Talk, PPT, quiz, on the spot test	Mrs. G.Amudha G.A.
Jan '24	II	<b>Database Design:</b> Overview of Design Process-The Entity Relationship Model – Constraints – Removing Redundant Attributes in Entity Sets-Entity-Relationship Diagrams-Reduction to Relational Schemas-Extended E-R features-Alternative Notations for Modeling Data. <b>Relational Database Design:</b> Features of Good Relational Design-Functional Dependency. <b>Normalization:</b> 1NF,2NF,3NF,BCNF ,4NF,5NF-FunctionalDependencyTheory.	18	Chalk and Talk, PPT, quiz, on the spot test	Mrs. G.Amudha G.A.
Feb '24	III	<b>Transaction Management:</b> Transaction Concept-Simple Transaction Model-Storage Structure-Transaction Atomicity and Durability-Transaction Isolation- Serializability. <b>Concurrency Control:</b> Lock Based Protocols-Locks-Granting of Locks-Two Phase Locking Protocol-Time Stamp Based Protocol - <b>Recovery System:</b> Failure	18	Chalk and Talk, PPT, quiz, on the spot test	Mrs. G.Amudha G.A.

		Classification- <b>Recovery and Atomicity</b> : Log Records-Database Modification-Concurrency Control and Recovery-Recovery Algorithm.			
Ma r '24	IV	<b>Distributed Database</b> : Homogeneous and Heterogeneous Databases- Distributed Data storage- Distributed Transactions-Commit Protocols-Concurrency Control in Distributed Databases- Distributed Query Processing. Case study: MongoDB	18	Chalk and Talk, PPT, quiz, on the spot test	Mrs. G. Amudha <i>G. Amudha</i>
Apr '24	V	<b>SQL</b> : Table Fundamentals - Viewing Data - Inserting - Deleting - Updating - Modifying - Constraints- Functions - Grouping-Subqueries- Joins-Views. <b>PL/SQL</b> : Introduction-PL/SQL Block -Data Types And Variables-Control Structure-Cursors - PL/SQL Security - Locks. PL/SQL Database Objects: Exception Handling- Packages - Procedures and Functions-Data base Triggers.	18	Seminar, PPT presentation .	Mrs. G. Amudha <i>G. Amudha</i>

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**LESSON PLAN**  
**2023-2024**

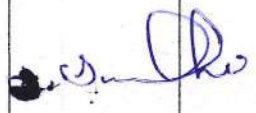

Class : I M.Sc. IT




Semester :II

Sub. Code : 23OPITDSE2D


Title of the Paper : Advanced Software Engineering

Total Hours : 75

Month & year	UNIT	Course Content	No . of Hours	Mode of Teaching	Course Teacher
Dec '23	I	<p><b>Introduction:</b> A Generic View of Process            - Process Models: The Waterfall Model-Incremental Model-Evolutionary Model-Specialized Model-The Unified Process-Agile Process - Agile process Models</p> <p><b>Exercise:</b>            Choose any one project and do the following exercises for the chosen project</p> <ol style="list-style-type: none"> <li>Student Result Management System</li> <li>Library management system</li> <li>Online course reservation system</li> <li>Railway reservation system</li> <li>Recruitment system</li> <li>Stock Maintenance System</li> </ol> <p>Write the Problem Statement for a suggested system of relevance</p>	15	Chalk and Talk, PPT, quiz, on the spot test	Mrs. S.Sumathi 
Jan'24	II	<p><b>System Engineering:</b> System Engineering Hierarchy - System Modeling            - Requirements Engineering: Tasks-Initiating The Process-Eliciting Requirements-Developing Use Cases-Negotiating Requirements-Validating Requirements - Building the Analysis Models: Data modeling concepts - Scenario based - Flow oriented - Class based Modeling</p> <p><b>Exercise:</b>            Preparation of Software Requirement Specification Document</p>	15	Chalk and Talk, PPT, quiz, on the spot test	Mrs. S.Sumathi 
Feb '24	III	<p><b>Design Engineering:</b> Design Concepts - Design Models - Pattern Based Design - Architectural Design - Component Level Design: Component - Class Based and</p>	15		Mrs. S.Sumathi

		<p>Conventional Components Design - User Interface Design: Analysis and Design</p> <p><b>Exercise:</b> Draw DFD and Use Case diagram for the chosen project using any CASE tools</p>		<p>Chalk and Talk, PPT, quiz, on the spot test</p>	
Mar '24	IV	<p><b>Testing Strategies:</b> Software Testing - Strategies: Conventional - Object Oriented - Validation Testing - System Testing: Recovery - Security - Stress - Performance - Testing Tactics: Testing Fundamentals- Black Box - White Box - Basis Path-Control Structure</p> <p><b>Exercise:</b> Develop test cases and perform various testing using any one of the testing tools</p>	15	<p>Chalk and Talk, PPT, quiz, on the spot test</p>	<p>Mrs. S.Sumathi</p> 
Apr'24	V	<p><b>Estimation :</b> Software project Estimation - Empirical Estimation models - Risk management : Software Risks - Risk Identification - Risk Projection - Risk Mitigation, Monitoring and Management - Quality Management: Quality Concepts - Quality Assurance -Software Reliability Quality Standards. Case Study :Devops Tools</p> <p><b>Exercise:</b> Perform Estimation of effort using FP Estimation for chosen system and prepare Gantt Chart/PERT Chart for the same.</p>	15	<p>Seminar, PPT presentation</p>	<p>Mrs. S.Sumathi</p> 

  
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**LESSON PLAN**  
**2023-2024**

Class : I M.Sc. IT

Semester :II

Sub. Code : 23OPITDSE2B

Title of the Paper : Operating Systems

Total Hours : 75

M on & y ear	U NI T	Course Content	No. of Hour s	Mode of Teaching	Course Teacher
Dec '23	I	<p><b>Process, Thread, SMP and Concurrency Control</b>            Process description and control-what is a process? – process states- process description –process control-execution of operating system-security issues. Threads, SMP , Micro kernels: Processes and threads-symmetric multiprocessing-microkernels–Linux process and thread management. Concurrency: Mutual exclusion and Synchronization –Principles of concurrency-mutual exclusion: hardware support-semaphores-monitors-message passing-reader/writer problem.</p>	15	Chalk and Talk, PPT, quiz, on the spot test	Mrs. G. Amudha <i>G. Amudha</i>
Jan '24	II	<p><b>Deadlock and Memory Management</b>            Concurrency: Deadlock and Starvation - principles of deadlock - deadlock prevention -deadlockavoidance-deadlockdetection-anintegrateddeadlockstrategy-diningphilosophers' problem – Linux kernel concurrency mechanisms. Memory management: memory management requirements-memory partitioning-paging-segmentation-security issues. Virtual memory : hardware and control structures - operating system software–Linux memory management.</p>	15	Chalk and Talk, PPT, quiz, on the spot test	Mrs. G. Amudha <i>G. Amudha</i>

Feb '24	III	<b>Uni Processor, Multiprocessor and real time Scheduling</b> Uni -processor scheduling: types of scheduling - scheduling algorithms. Multiprocessor and Real time scheduling : multiprocessor scheduling - real time scheduling – Linux scheduling	15	Chalk and Talk, PPT, quiz, on the spot test	Mrs. G.Amudha <i>G. Amudha</i>
Mar '24	IV	<b>I/O Management and File Systems</b> I/O management and Disk scheduling: I/O devices- organization of I/O function -operating system design issues - I/O buffering - disk scheduling - RAID - disk cache -Linux I/O. File management: overview - file organization and access - file directories -file sharing - record blocking -secondary storage management - file system security – Linux file management.	15	Chalk and Talk, PPT, quiz, on the spot test	Mrs. Raja Sangeetha <i>G. Raja Sangeetha</i>
Apr '24	V	<b>Embedded Operating system, Distributed systems</b> Embedded operating system: Embedded Systems- Characteristics of embedded operatingsystems TinyOS. Distribute dprocessing, client/server and clusters : client/server computing – Distributed message passing – remote procedure calls – clusters – Beowulf and Linux clusters.	15	Seminar, PPT , Group discussion	Mrs. Raja Sangeetha <i>G. Raja Sangeetha</i>

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**LESSON PLAN**  
**2023-2024**

Class : I M.Sc. IT


Semester :II


Sub. Code 23OPITSEC21

Title of the Paper : Multimedia

Total Hours : 30

Month & year	UNIT	Course Content	No. of Hours	Mode of Teaching	Course Teacher
Dec '23	I	What is Multimedia – Introduction to making Multimedia – Macintosh and Windows Production platforms	6	Chalk & Talk, PPT	Mrs. S.Sumathi
Jan'24	II	Basic Software tools – Making Instant Multimedia – Multimedia authoring tools – Multimedia building blocks.	6	Chalk & Talk, PPT	Mrs. S.Sumathi
Feb '24	III	Text – Sound – Images – Animation– Video.	6	Chalk & Talk, PPT	Mrs. S.Sumathi
Mar '24	IV	Multimedia and the Internet: The Internet and how it works–Tools for World Wide Web– Designing for the World Wide Web.	6	Chalk & Talk, PPT, Group Discussion	Mrs. S.Sumathi
Apr'24	V	1. Basic tools used in Flash. 2. Develop a Flash application using motion tween. 3. Develop a Flash application using shape tween. 4. Develop a Flash application for ball bouncing using motion guide path. 5. Develop a Flash application for masking effect. 6. Develop a Flash application using layer based animation. 7. Develop a Flash application to represent the growing moon 8. Write action script to play and stop an animation. 9. Write action script to find the biggest of three numbers. 10. Write action script to find the factorial of a number	6	Demo & Practical Session	Mrs. S.Sumathi Mrs. S.Sumathi
<b>Total</b>			<b>30</b>		

  
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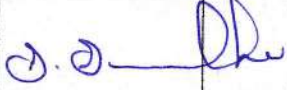
**LESSON PLAN**  
**2023-2024**

**Class : II M.Sc. IT**  
**Sub. Code 22OPIT41**




**Semester :IV**

**Title of the Paper :Big Data Analytics**


**Total Hours : 75**

Month & Year	Unit	Course Content	Hrs	Mode of Teaching	Course Teacher
Dec '23	I	<b>Introduction to Big Data:</b> Types of Digital Data: Classification of Digital Data Introduction to Big Data: Characteristics of data- Evolution of Big data-Challenges of Big data-Other Characteristics of Data which are not Definitional Traits of Big Data Why Big Data- Traditional Business Intelligence (BI) versus Big Data – A Typical Data Warehouse Environment.	15	Chalk & Talk, PPT	Mrs.S.Sumathi 
Jan'24	II	<b>Analytics Basics:</b> Big Data Analytics: Introduction – Big Data Analytics – Sudden Hype Around Big Data Analytics – Classification of Analytics – Greatest Challenges that Prevent Business from capitalizing on Big Data Top Challenges Facing Big Data – Importance of Big Data Analytics – Various kinds of Technologies to meet the Challenges Posed by Big Data – Data Science – Terminologies Used in Big Data Environments.	15	Chalk & Talk, Spot test, Exercise, Assignment, PPT, Video material.	Mrs.S.Sumathi 



Feb'24	III	<b>Big Data Technologies:</b> The Big Data Technology Landscape: NoSQL (Not Only SQL) – Hadoop, Introduction to Hadoop: Introducing Hadoop – RDBMS versus Hadoop – Distributed Computing Challenges – History of Hadoop. History of Hadoop – Hadoop Overview – Use Case of Hadoop – Hadoop Distributors – HDFS(Hadoop Distributed File System) – Processing Data with Hadoop – Managing Resources and Applications with Hadoop.	15	Chalk & Talk, Exercise, PPT, video material	Mrs.S.Sumathi 
Mar '24	IV	<b>Introduction to MAP REDUCE Programming:</b> Introduction – Mapper – Reducer Combiner– Partitioner – Searching – Sorting – Compression.	15	Chalk & Talk, Exercise, Assignment, video material, Group Discussion	Mrs.S.Sumathi 
Apr '24	V	<b>Introduction to Hive:</b> What is Hive – Hive Architecture – Hive Data Types – Hive File Format. Hive Query Language (HQL) – RCFile Implementation – SerDe – User – Defined Function (UDF).	15	Quiz, Chalk & Talk, Exercise, Spot test, Assignment, Seminar	Mrs.S.Sumathi 

  
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
**LESSON PLAN**  
**2023-2024**

Class : II M.Sc. IT



Semester :IV

Sub. Code 22OPIT42


Title of the Paper : Advanced Software Engineering Total Hours : 75

Mon & year	Unit	Course Content	Hrs.	Mode	Course Teacher
Dec '23	I	<p><b>Software and Software Engineering:</b> The Nature of Software – The unique Nature of WebApps – Software Engineering – The Software Process – Software Engineering Practice.</p> <p><b>Process Models:</b> A Generic Process Model – Process Assessment and Improvement – Prescriptive Process Models – Specialized Process Models – The Unified Process – Personal and Team Process Models – Process Technology – Product and Process.</p>	15	Chalk & Talk, PPT	Mrs.  R.Lakshmi
Jan'24	II	<p><b>Requirements Modeling:</b> Requirements Analysis – Scenario-Based Modeling – UML Models that Supplement the Use Case – Data Modeling Concepts – Class-Based Modeling – Requirements Modeling Strategies – Flow-Oriented Modeling – Creating a Behavioral Model – Patterns for Requirements Modeling – Requirements Modeling for WebApps.</p>	15	Chalk & Talk, Spot test, Exercise, Assignment, PPT, Video material.	Mrs.  R.Lakshmi
Feb '24	III	<p><b>Software Quality Assurance:</b> Issues – Elements of Software Quality Assurance – SQA tasks, Goals, Metrics – Formal Approaches to SQA – Statistical Software Quality Assurance – Software Reliability – The ISO 9000 Quality Standards – The SQA Plan.</p> <p><b>Software Testing Strategies:</b> A Strategic Approach to Software Testing – Strategic Issues – Test Strategies for Conventional Software – Test Strategies for Object-Oriented Software – Test Strategies for WebApps – Validation Testing – System Testing – The Art of Debugging.</p>	15	Chalk & Talk, Spot test, Exercise, Assignment, PPT, Video material.	Mrs.  R.Lakshmi



Mar '24	IV	<p align="center"><b>Estimation for Software</b></p> <p><b>Projects:</b> Observation on Estimation – The Project Planning Process Software Scope and Feasibility – Resources – Software Project Estimation – Decomposition Techniques – Empirical Estimation Models – Estimation for Object-Oriented Projects – Specialized Estimation Techniques – The Make/Buy Decision.</p> <p><b>Project Scheduling:</b> Basic Concepts – Project Scheduling – Defining a Task Set For the Software Project – Defining a Task Network – Scheduling – Earned Value Analysis.</p>	15	Chalk & Talk, Spot test, Exercise, Assignment, PPT, Video material.	 Mrs. R.Lakshmi
Apr'24	V	<p align="center"><b>Software Process</b></p> <p><b>Improvement:</b> SPI – The SPI Process – The CMMI The People CMM – Other SPI Frameworks – SPI Return on Investment – SPI Trends. <b>Emerging Trends in Software Engineering:</b> Technology Evolution – Observing Software Engineering Trends – Identifying “Soft Trends” – Technology Directions – Tools-Related Trends.</p>	15	Chalk & Talk, Spot test, Exercise, Assignment, PPT, Video material.	 Mrs. R.Lakshmi

  
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**LESSON PLAN**  
**2023-2024**

**Class : II M.Sc. IT**  
**Sub. Code 22OPIT43**



**Semester :IV**

**Title of the Paper : Internet of Things**


**Total Hours : 75**

Mon & year	Unit	Course Content	Hrs.	Mode of Teaching	Course Teacher
Dec '23	I	<b>Introduction to Internet of Things:</b> Introduction – Physical Design of IoT – Logical Design of IoT – IoT Enabling Technologies – IoT& Deployment Templates. <b>Domain Specific IoTs:</b> Introduction – Home Automation – Cities – Environment – Energy – Retail – Logistics – Agriculture – Industry – Health & Lifestyle.	15	Chalk & Talk, PPT	Mrs. R.Raja Sangeetha 
Jan'24	II	<b>IoT and M2M :</b> Introduction : M2M – Difference between IoT and M2M – SDN and NFV for IoT. <b>IoT System Management with NETCONF-YANG :</b> Need for IoT Systems Management – Simple Network Management Protocol (SNMP) – Network Operator Requirements – NETCONF- YANG – IoT Systems Management with NETCONF_YANG.	15	Chalk & Talk, Spot test, Exercise, Assignment, PPT, Video material.	Mrs. R.Raja Sangeetha 
Feb '24	III	<b>IoT Platforms Design Methodology:</b> Introduction – IoT Design Methodology – Case Study on IoT System for Weather Monitoring – Motivation for using Python. <b>IoT Systems – Logical Design using Python:</b> Introduction – Installing Python – Python Data types & Data Structures – Control Flow – Functions – Modules – Packages – File Handling – Date/Time	15	Chalk & Talk, Exercise, PPT, video material	Mrs. R.Raja Sangeetha 



		Operations – Classes – Python packages of Interest for IoT.			
Mar '24	IV	<b>IoT Physical Devices &amp; Endpoints:</b> What is an IoT Device – Exemplary Device: Raspberry Pi– About the Board – Linux on Raspberry Pi – Raspberry Pi Interfaces – Programming Raspberry Pi with Python – Other IoT devices. <b>IoT Physical Servers &amp; Cloud Offerings :</b> Introduction to Cloud Storage Models & Communication APIs – WAMP-Auto Bahn for IoT – Xively Cloud for IoT – Python Web application Framework-Django – Designing a RESTful Web API – Amazon Web Services for IoT – SkynetIoT messaging platform	15	Chalk & Talk, Exercise, Assignment, video material, Group Discussion	Mrs. R.Raja Sangeetha 
Apr'24	V	Case Studies Illustrating IoT Design: Introduction – Home Automation – Cities – Environment – Agriculture – Productivity applications. Data Analytics for IoT : Introduction – Apache Hadoop – Using HadoopMapReduce for Batch Data Analysis – Apache Oozier – Apache Spark – Apache Storm – Using Apache Storm for Real-time Data Analysis.	15	Quiz, Chalk & Talk, Exercise , Spot test, Assignment, Seminar	Mrs. R.Raja Sangeetha 

  
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**LESSON PLAN**  
**2023-2024**

**Class : II M.Sc. IT**


**Semester :IV**


**Sub. Code : 22OPITDSE4A**


**Title of the Paper : Cloud Computing Total Hours : 75**

Mon & year	Unit	Course Content	Hrs.	Mode of Teaching	Course Teacher
Dec '23	I	<b>Cryptography:</b> Terminology and Background – Substitution Ciphers – Transpositions – Making Good Encryption Algorithms- Data Encryption Standard- AES Encryption Algorithm – Public Key Encryption – The Uses of Encryption.	15	Chalk & Talk, PPT	<i>Rlaf</i> Mrs.R.Lakshmi
Jan'24	II	<b>Program Security:</b> Secure programs – Non-malicious Program Errors – Viruses and other Malicious Code – Targeted Malicious code – Controls Against Program Threat. Protection in General-Purpose Operating System: Protected Objects and Methods of Address Protection – Control of Access to General Objects – File Protection Mechanisms - User Authentication.	15	Chalk & Talk, Spot test, Exercise, Assignment, PPT, Video material.	<i>Rlaf</i> Mrs.R.Lakshmi
Feb '24	III	<b>Database and Data Mining Security:</b> Introduction to Databases – Security Requirements – Reliability and Integrity  Sensitive Data – Inference – Multilevel Databases – Proposals for Multilevel Security – Data Mining.	15	Chalk & Talk, Exercise, PPT, video material	<i>Rlaf</i> Mrs.R.Lakshmi
Mar '24	IV	<b>Security in Networks :</b> Threats in networks – Network Security Controls – Firewalls – Intrusion Detection - Systems – Secure e mail	15	Chalk & Talk, Exercise, Assignment, video	<i>Rlaf</i> Mrs.R.Lakshmi



				material, Group Discussion	
Apr'24	V	<b>Administering Security:</b> Security Planning – Risk Analysis – Organizational Security Policies – Physical Security.	15	Quiz, Chalk & Talk, Exercise, Spot test, Assignment, Seminar	Mrs.R.Lakshmi 

  
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