Vijaya College, R.V. Road, Bengaluru-560004

Department of Computer Science

ACADEMIC PLANNER 2023-2024

II Semester

Name of the Department	Computer Science	Course: BCA II Semester Subject Title: CA67T: JAVA PROGRAMMING	
Semester	**II**		
Week/Month	**Day**	**Portions Planned for 1 hour**	**Teacher**
4rd week of MARCH	1	Introduction to JAVA: JAVA Evolution: Java History	SRIKANTH S S
	2	Java Features, How Java Differs from C and C++	
	3	Java and Internet, Java and World Wide Web, Web Browsers	
1ST week of APRIL	1	Hardware and Software Requirements, Java Support Systems	
	2	Java Environment, Java Virtual Machine	
	3	Overview of JAVA Language: Introduction, Simple Java program	
2ND week of APRIL	1	More of Java Statements, Implementing a Java Program	
	2	Command Line Arguments, Programming Style	
	3	Constants, Variables, and Data Types: Introduction	
3RD week of APRIL	1	Constants, Variables, Data Types, Declaration of Variables, Giving Values to Variables	
	2	Scope of Variables, Symbolic Constants	
	3	Type Casting, Getting Values of Variables, Standard Default Values	
4TH week of APRIL	1	Operators and Expressions: Introduction, Arithmetic Operators, Relational Operators, Logical Operators	
	2	Assignment Operators, Increment and Decrement Operators	
	3	Special Operators, Arithmetic Expressions, Evaluation of Expressions Conditional Operators, Bitwise Operators	
1ST week of MAY	1	Precedence of Arithmetic Operators, Type Conversion and Associativity	
	2	Mathematical Functions. Decision Making and Branching: Introduction	
	3	Decision Making with if Statement, Simple if Statement, The if…..else Statement	
2ND week of MAY	1	Nesting of if……Else Statements, The else if Ladder, The Switch Statement	

	2	The ?: Operator. Decision Making and Looping: Introduction.	SRIKANTH S S
	3	The while Statement, The do Statement, The for Statement	
3rdweek of MAY	1	Jumps in Loops, Labelled Loops, Defining a Class, Adding Variables,	
	2	Adding Methods, Creating Objects, Accessing Class Members,	
	3	Constructors, Method Overloading, Static Members, Nesting of Methods	
4th week of MAY	1	Inheritance: Extending a Class, overriding	
	2	Finalizer methods, Abstract Methods and Classes	
	3	Abstract Methods and Classes examples and programs, Visibility Control-public, private, default and protected	
1st week of june	1	Arrays, One-dimensional Arrays, Creating an Array, Two - Dimensional Arrays	
	2	Creating an Array, Two – dimensional Arrays, strings, wrapper classes,	
	3	Vectors, Interfaces: Multiple Inheritance: Introduction, Defining Interfaces, Extending Interfaces, Implementing Interfaces	
2nd week JUNE	1	Accessing Interface Variables. Packages: Putting Classes together: Introduction, Java API Packages	
	2	Using System Packages, Creating Packages, Accessing a Package. Using a Package, adding a Class to a Package, Hiding Classes	
	3	Multithreaded Programming: Introduction, Creating Threads, Extending the Thread Class	
3RD week of JUNE	1	Stopping and Blocking a thread, Life Cycle of a thread, Using Thread Methods, Thread Exceptions	
	2	Thread Priority, Synchronization, implementing 'Runnable Interface'	
	3	Managing Exceptions, Introduction, Types of Exception Handling Code, Multiple Catch Statements, Using Finally Statement	
4TH week of JUNE	1	Throwing Our Own Exceptions, Using Exceptions for Debugging. Applet Programming-Introduction	
	2	How Applets Differ from Applications, Preparing to Write Applets, Building Applet Code	
	3	More About HTML Tags, Displaying Numerical Values, Getting Input from the User. Applet Tag, Adding Applet to HTML File, running the Applet.	
1ST week of JULY	1	Graphics programming: Introduction, The Graphics Class, Lines and rectangles, circles, and Ellipses Drawing Arcs, Drawing Polygons, Lines Graphs	
	1	Using Control Loops in Applets, Drawing Bar Charts, Using the File Class, Input / Output Exceptions, Creation of Files,	

		Reading / Writing Characters, Reading / Writing Bytes Handling Primitive Data Types	SRIKANTH S S
	2	Concept of Stream Classes, Streams, Byte Stream Classes, Character Stream Classes Using Streams, Other Useful I/O Classes, Concatenating and Buffering Files, Interactive Input and output, Other Stream Classes.	
	3	Introduction to java swings and Beans	

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1ST week of APRIL	1	Hardware and Software Requirements, Java Support Systems	
	2	Java Environment, Java Virtual Machine	
	3	Overview of JAVA Language: Introduction, Simple Java program	
2ND week of APRIL	1	More of Java Statements, Implementing a Java Program	
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	2	Assignment Operators, Increment and Decrement Operators	
	3	Special Operators, Arithmetic Expressions, Evaluation of Expressions Conditional Operators, Bitwise Operators	
1ST week of MAY	1	Precedence of Arithmetic Operators, Type Conversion and Associativity	
	2	Mathematical Functions. Decision Making and Branching:	

		Introduction	MGB
	3	Decision Making with if Statement, Simple if Statement, The if…..else Statement	
2ND week of MAY	1	Nesting of if……Else Statements, The else if Ladder, The Switch Statement	
	2	The ?: Operator. Decision Making and Looping: Introduction.	
	3	The while Statement, The do Statement, The for Statement	
3rdweek of MAY	1	Jumps in Loops, Labelled Loops, Defining a Class, Adding Variables,	
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	2	Finalizer methods, Abstract Methods and Classes	
	3	Abstract Methods and Classes examples and programs, Visibility Control-public, private, default and protected	
1st week of june	1	Arrays, One-dimensional Arrays, Creating an Array, Two - Dimensional Arrays	
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2nd week JUNE	1	Accessing Interface Variables. Packages: Putting Classes together: Introduction, Java API Packages	
	2	Using System Packages, Creating Packages, Accessing a Package. Using a Package, adding a Class to a Package, Hiding Classes	
	3	Multithreaded Programming: Introduction, Creating Threads, Extending the Thread Class	
3RD week of JUNE	1	Stopping and Blocking a thread, Life Cycle of a thread, Using Thread Methods, Thread Exceptions	
	2	Thread Priority, Synchronization, implementing ‘Runnable Interface’	
	3	Managing Exceptions, Introduction, Types of Exception Handling Code, Multiple Catch Statements, Using Finally Statement	
4TH week of JUNE	1	Throwing Our Own Exceptions, Using Exceptions for Debugging. Applet Programming-Introduction	
	2	How Applets Differ from Applications, Preparing to Write Applets, Building Applet Code	
	3	More About HTML Tags, Displaying Numerical Values, Getting Input from the User. Applet Tag, Adding Applet to HTML File, running the Applet.	

1ST week of JULY	1	Graphics programming: Introduction, The Graphics Class, Lines and rectangles, circles, and Ellipses Drawing Arcs, Drawing Polygons, Lines Graphs	MGB
	1	Using Control Loops in Applets, Drawing Bar Charts, Using the File Class, Input / Output Exceptions, Creation of Files, Reading / Writing Characters, Reading / Writing Bytes Handling Primitive Data Types	
	2	Concept of Stream Classes, Streams, Byte Stream Classes, Character Stream Classes Using Streams, Other Useful I/O Classes, Concatenating and Buffering Files, Interactive Input and output, Other Stream Classes.	
	3	Introduction to java swings and Beans	

Name of the Department	**Computer Science**	**Subject Title**	**Teachers**
Semester	**II BCA**	**Database Management System**	**SB/KMS**
Week/Month & Date (Preferably)	**Day**	**Portions Planned for 1 hour**	
4th week of March 24	1	**Introduction:** Database and Database Users Characteristics of the Database Approach	**SB**
	2	Different people behind DBMS, Implications of Database Approach.	**SB**
	3	Advantages of using DBMS, When not to use a DBMS.	**KMS**
	4	Revision and important questions discussed	**SB**

1st week of APRIL 24	1	**- Relational Data Model and Relational Algebra:** Relational Model Concepts., Relational Model Constraints and Relational Database Schema, Defining Relations, Update Operations on Relations.	**SB**
	2	Basic Relational Algebra Operations, Additional Relational Operations **,**Examples of Queries in the Relational Algebra.,	**KMS**
	3	Relational Database design Using ER – to – Relational Mapping**.**	**SB**
	4	-**Relational Database Language:** Data definition in SQL, Queries in SQL, Insert, Delete and Update Statements in SQL	**SB**
2^{ND} week of APRIL 24	1	Queries in SQL, Insert, Delete and Update Statements in SQL	**KMS**
	2	Queries in SQL, Insert, Delete and Update Statements in SQL	**SB**
	3	Queries in SQL, Insert, Delete and Update Statements in SQL	**SB**
	4	Queries in SQL, Insert, Delete and Update Statements in SQL	**KMS**
3^{RD} week of APRIL 24	1	SQL querries	**SB**
	2	Views in SQL, Specifying General Constraints as Assertions,	**SB**
	3	Specifying indexes, Embedded SQL**.**	**KMS**
	4	Important question discussion	**SB**
4^{TH} week of	1	–**Database System Concepts and Architecture:** Data Models, Schemas, and Instances., DBMS Architecture	**SB**

APRIL 24	2	Data Independence., Database languages and interfaces., The Database system Environment,	**KMS**
	3	Classification of Database Management Systems**.**	**SB**
	4	**Data Modeling Using the Entity-Relationship Model:** High level Conceptual Data Models for Database Design with an example., Entity types, Entity sets, Attributes, and Keys, ER Model Concepts	**SB**
1st week of MAY 24	1	Notation for ER Diagrams, Proper naming of Schema Constructs, Relationship types of degree higher than two**.**	**KMS**
	2	**- Functional Dependencies and Normalization for Relational Databases:** Informal Design Guidelines for Relational Schemas, Functional Dependencies, Normal Forms Based on Primary Keys.	**SB**
	3	General Definitions of Second and Third Normal Forms, Boyce–Codd Normal Form	**SB**
	4	Example of normalisation	**KMS**
2^{ND} week of MAY 24	1	**- Record Storage and Primary File Organization:** Secondary Storage Devices. Buffering of Blocks. Placing file Records on Disk. Operations on Files,	**SB**
	2	File of unordered Records (Heap files), Files of Ordered Records (Sorted files),	**SB**
	3	Hashing Techniques, and Other Primary file Organization.	**KMS**
	4	**:** Introduction to simple programming	**SB**

3RD week of MAY 24	1	Exceptions	**SB**
	2	Cursor Management	**KMS**
	3	Cursor Management	**SB**
	4	Database Triggers	**SB**
4TH week of MAY 24	1	Functions, Procedures	**KMS**
	2	Procedures	**SB**
	3	Packages.	**SB**
	4	Discussion on Important questions	**KMS**
1st week of JUNE 24	1	**- Transaction Processing Concepts:** Introduction, Transaction and System Concepts, Desirable properties of transaction	**SB**
	2	Schedules and Recoverability, Serializability of Schedules,	**SB**
	3	Serializability of Schedules	**KMS**
	4	Transaction Support in SQL	**SB**
2ND week of JUNE 24	1	Locking Techniques for Concurrency Control,	**SB**
	2	Concurrency Control based on time stamp ordering,	**KMS**
	3	Optimistic Concurrency control techniques	**SB**
	4	Optimistic Concurrency control techniques	**SB**
	1	Using locks for Concurrency Control in Indexes	**KMS**

3RD week of JUNE 24	2	Serializability of Schedules	**SB**
	3	Transaction Support in SQL	**SB**
	4	Locking Techniques for Concurrency Control	**KMS**
4TH week of JUNE 24	1	Internal Test 1	**SB**
	2	Repetition of Unit I	**SB**
	3	Repetition of Unit II	**KMS**
	4	Repetition of Unit III	**SB**
	2	Solving model question paper	**SB**
	3	Solving model question paper	**KMS**
	4	Solving model question paper	**SB**

Name of the Department	**Computer Science (BCA)**	**Course: BCA II Semester** **Subject Title:** **CA-C6T: COMPUTER ARCHITECTURE**	**Total Teaching Hours: 48** **No of Hours / Week: 03**
Semester	**II**	**Paper**	
Week/Month	**Hour**	**Portions Planned for 1 hour**	**Teacher**
4th week of March	1	Number Systems: Binary, Octal, Hexa decimal numbers, base conversion	
	2	addition, subtraction of binary numbers, one's and two's complements	
	3	**Unit3:Input-Output-**organization ,Transfer modes **-BN**	
	1	positive and negative numbers, character codes ASCII, EBCDIC.	

1st week of April	2	Computer Arithmetic: Addition and Subtraction, Multiplication and Division algorithms	
	3	**Unit3:Input-Output-** Programmed I/O **-BN**	
2nd week of April	1	Floating-point Arithmetic Operations, Decimal arithmetic operations.	
	2	Structure of Computers: Computer types, Functional units, Basic operational concepts	
	3	**Unit3:Input-Output-** DMA **-BN**	
3rd week of April	1	Von-Neumann Architecture, Bus Structures,	
	2	Digital Logic Circuits: Logic gates, Boolean algebra,	
	3	**Unit3:Input-Output-** ILP(Instruction Level Parallelism) **-BN**	**SS-02 hrs** **BN-01 hr**
4th week of April	1	k-map simplification	
	2	Half Adder and Full Adder	
	3	Revision -I/O **-BN**	
1st week of May	1	Software, Performance, Multiprocessors and Multicomputer,	
	2	Sequentialcircuits:Shiftregisters,Counters,IntegratedCircuits	
	3	**Unit-04:Memory System-**Introduction,Memory Hierarchy **-BN**	
2nd week of May	1	Mux, Demux, Encoder,Decoder.	
	2	Data representation: Fixed and Floating point.	
	3	**Unit-04:Memory System-**Semiconductor Memories-**BN**	
3rd week of May	1	Basic Computer Organization and Design: Instruction codes, Computer Registers, Input-Output and interrupt.	
	2	Computer Instructions and Instruction cycle.	
	3	**Unit-04:Memory System-**Cache &Virtual Memories-**BN**	

4th week of May	INTERNALS		
5th week of May	1	Timing and Control, Memory-Reference Instructions,	**SS-02 hrs** **BN-01 hr**
	2	Central processing unit: Stack organization, Instruction Formats,	
	3	**Unit-04:Memory System-**Secondary storage &RAID-**BN**	
1st week of June	1	Addressing Modes, Data Transfer and Manipulation,	
	2	Complex Instruction, Set Computer (CISC) Reduced Instruction	
	3	**Unit-04:Memory System-**Secondary storage &RAID-**BN**	
2nd week of June	1	Set Computer (RISC), CISC vs RISC	
	2	Register Transfer and Micro-operations: Register Transfer Language,	
	3	**Unit-04:Multiprocessor and Thread level Parallelism-** Introduction **-BN**	
3rd week of June	1	Register Transfer, Bus and Memory Transfers, Arithmetic Micro-Operations	
	2	Logic Micro-Operations, Shift Micro-Operations, Arithmetic logic shift unit.	
	3	**Unit-04:Multiprocessor and Thread level Parallelism-** Interconnection Structures & Multithreaded architecture- **BN**	
4th week of June	1	Micro-programmed Control: Control Memory,	
	2	Revision	
	3	**Unit-04:Multiprocessor and Thread level Parallelism-** Distributed Memory MIMD Architecture **BN**	
1st week of July	1	Revision	
	2	Test	

	3	Revison/doubt clearing session /Test- **BN**	

Semester	**IV**	**Paper**	**CA-C17T**
Name of the Department	**BCA**	**Subject Title**	**THE DESIGN AND ANALYSIS OF ALGORITHMS**
Week/Month & Date (Preferably)	**Day**	**Portions Planned**	**Teacher DIVYA S R**
4th week of March 2024	1	Introduction: Algorithms, Fundamentals of Algorithmic Problem Solving,	SRD
	2	Important Problem Types,	SRD
	3	Fundamental Data Structures.	SRD
1st Week of April 2024	1	Fundamentals of the Analysis of Algorithm Efficiency:	SRD
	2	TheAnalysis Framework,	SRD
	3	Asymptotic Notations and	SRD
2nd week of April 2024	1	Basic Efficiency Classes,	SRD
	2	Mathematical Analysis of Non-recursive and Recursive Algorithms, Empirical Analysis of Algorithms	SRD
	3	Brute Force Method: Selection Sort and Bubble Sort,	SRD
3rd week of April 2024	1	Sequential Search, Brute-Force String Matching,	SRD
	2	Exhaustive Search, Depth-First Search and Breadth-First Search.	SRD
	3	Decrease and Conquer: Insertion Sort,	SRD
4th week of April 2024	1	Topological Sorting, Algorithms for Generating Combinatorial Objects	SRD
	2	, Decreaseby-a-Constant-Factor Algorithms.	SRD
	3	Divide and Conquer: Merge Sort,	SRD

1st Week of May 2024	1	Quick Sort,	SRD
	2	Binary Tree	SRD
	3	Traversals and Related Properties, Strassen's Matrix Multiplication.	SRD
2nd Week of May 2024	1	Space and Time Tradeoffs: Sorting by Counting	SRD
	2	, Input Enhancement in String Matching, Hashing.	SRD
	3	Dynamic programming: Binomial Coefficient,	SRD
3rd week of May 2024	1	Principle of Optimality, Optimal Binary Search	SRD
	2	Trees, ,	SRD
	3	Knapsack Problem and Memory Functions	SRD
4th week of May 2024	1		
	2		
	3		
5th week of May 2024	1	Warshall's and Floyd's Algorithms.	SRD
	2	Greedy Technique: Prim's Algorithm	SRD
	3	Kruskal's Algorithm	SRD
1st week of June 2024	1	Dijkstra's Algorithm,	SRD
	2	, , Huffman Trees.	SRD
	3	Limitations of Algorithm Power: Lower-Bound Arguments,	SRD
2nd week of June 2024	1	Decision Trees, P, NP and NP	SRD
	2	Complete Problems .Coping with the Limitations of Algorithm Power:	SRD
	3	Back Tracking: n Queens problem,	SRD
3th week of June	1	Hamiltonian Circuit Problem, Subset-Sum Problem.	SRD

2024	2	Branch-and-Bound: Assignment Problem,	SRD
	3	Knapsack Problem,	SRD
4th Week of June 2024	1	Traveling Salesman Problem.	SRD
	2	REVISION AND SAMPLE PAPERS	SRD
	3	REVISION	SRD
1st week of July 2024	1	REVISION	SRD
	2	REVISION AND SAMPLE PAPERS SOLVED	SRD

Name of the Department	**Computer Science (BCA)**	**Course: BCA IV Semester** **Subject Title:** **CA-C18T :INTERNET TECHNOLOGIES**	
Semester	**IV**	**Paper**	
Week/Month	**Hour**	**Portions Planned for 1 hour**	**Teacher** **SOWMYA S(SS)**
4th week of March	1	INTERconnectedNETwork: Internet: The Giant Wide Area Network	
	2	Communicating over the Internet, Accessing the Internet	
	3	Internet Organisations, Cyber Ethics	
1st week of April	1	Internet Applications: Internet services	
	2	Electronic Mail(E-Mail)	
	3	File Transfer, Real-Time User Communication	
2nd week of April	1	Remote Login, Usenet	
	2	World Wide Web: The Web, The Working Web	
	3	Web Terminology, Web Architecture	

3rd week of April	1	World Wide Web Challenges.	SS
	2	Hypertext Transfer Protocol (HTTP):HTTP, HTTP Version,	
	3	HTTP connections, HTTP Communication	
4th week of April	1	Hypertext Transfer Protocol Secure, Hypertext Transfer Protocol State Retention	
	2	Cookies, Hypertext Transfer Protocol Cache	
	3	Evolution of Web: The Generations of Web, Web 1.0, Web 2.0, Web 3.0,	
1st week of May	1	The Generations of Web, Web 3.0	
	2	Big Data: A Special Discussion Big Data: A Special Discussion	
	3	Web IR: Information Retrieval on the Web:	
2nd week of May	1	Web Information Retrieval Tools	
	2	Web Information Retrieval Architecture (Search Engine Architecture)	
	3	Web Information Retrieval Performance Metrics	
3rd week of May	1	Web Development Basics: Elements of Web Development	
	2	Client-Side and Server-Side Scripting	
	3	Model-View-Controller Architecture for Web Application Development	
4th week of May		**INTERNALS**	
5th week of May	1	Client-Side Technologies, HTML-Hypertext Markup Language	
	2	CSS: Cascading Style Sheets	
	3	CSS: Cascading Style Sheets	

1st week of June	1	JavaScript	**SS**
	2	Bootstrap Framework, AngularJS Framework,	
	3	Server-Side Technologies: Server-Side Scripting	
2nd week of June	1	Personal Home Pages	
	2	Node.js: Server-Side JavaScript.	
	3	Web Application Frameworks:Django ,Ruby on Rails.	
3rd week of June	1	Web Database, Structured Query Language: Relational Databases,	
	2	NoSQL Databases: Non-relational and Distributed Data,	
	3	Understanding Popular Databases	
4th week of June	1	Research Trends on the Web:	
	2	Contextual Information Retrieval, Web Mining	
	3	Revision	
1st week of july	1	Revision	
	2	Revision	
	3	Test	

Name of the Department	**Computer science**	**Subject Title**	**CA-E2**
BCA	**VI SEM**	**SOFTWARE TESTING**	**Teacher**
Week/Month	**Day**	**Portions Planned for 3 hour**	**JAIGOPI K (JK)**
1ST week of APR 24	1	Introduction: Basic definitions, A testing life cycle, Test Cases,	**JK**
	2	Fundamental approaches to apply Test Cases, Levels of Testing,	
	3	Examples: The NextDate function, Triangle problem and The Commission Problem	
2nd week of APR 24	1	The SATM (Simple Automatic Teller Machine) problem.	

	2	Boundary Value Testing: Generalizing Boundary Value Analysis,	**JK**
	3	Limitations of Boundary Value Analysis, Robustness Testing,	
3rd week of APR 24	1	Worst-Case Testing, Special Value Testing	**JK**
	2	Test cases for the Triangle problem, Test cases for the NextDate function, Test cases for the Commission Problem,	
	3	Random Testing and Guidelines for Boundary Value Testing.	
4th week of APR 24	1	Equivalence Class Testing: Equivalence Classes, Weak Normal Vs Strong Normal	**JK**
	2	Equivalence Class Testing, Weak Robust Vs Strong Robust Equivalence Class Testing,	
	3	Equivalence Class Test Cases for the Triangle Problem, Equivalence Class Test Cases for the Next Date Function and	
1ST week of MAY 24	1	Equivalence Class Test Cases for the Commission Problem,	**JK**
	2	Guidelines for Equivalence Class Testing. Decision Table Based Testing: Decision tables,	
	3	Test cases for the triangle problem, Test cases for the Next Date function, Test cases for	
2nd week of MAY 24	1	the commission problem, Guidelines and observations. Data flow Testing: Definition Use	**JK**
	2	Testing, Example- The Commission Problem, Slice-Based Testing,	
	3	Guidelines and Observations.	
3rd week of MAY 24	1	Levels of Testing: The SATM System, Structural and Behavioural Insights.	**JK**
	2	Integration Testing: A Closer Look at the SATM System, Decomposition-Based Integration,	
	3	TopDown Vs Bottom-Up Integration, Sandwich Integration, Call Graph-Based Integration,	
4th week of MAY24	1	Pair wise Integration, Neighborhood Integration, Path-Based Integration.	**JK**
	2	System Testing: Threads, Basic concepts for requirements specification, Finding threads, Structural Strategies	
	3	**INTERNALS**	
1ST week of JUNE 24	1	functional strategies for thread testing,	**JK**
	2	Interaction Testing: A Taxonomy of Interactions, Static Interaction in a Single Processor,	
	3	Static Interaction in Multiple Processors, Dynamic Interaction in a Single Processor,	
	1	Dynamic Interaction in Multiple	

2nd week of JUNE 24		Processors, Client-Server Testing.	**JK**
	2	Object Oriented Testing: Issues in Object Oriented Testing, Implication of Composition	
	3	Encapsulation, Implications of Inheritance, Implications of Polymorphism, GUITesting, Object-Oriented Integration Testing.	
3rd week of JUNE 24	1	Exploratory Testing: The context-driven school, Exploring exploratory testing,	**JK**
	2	Exploring a familiar example, Exploratory and context-driven testing observations.	
	3	Model-Based Testing: Testing based on models, Appropriate models, Use case-based testing,	
4th week of JUNE 24	1	Commercial tool support for model-based testing. Test-Driven Development: Test-then-code cycles,	**JK**
	2	Automated test execution, Java and JUnit example, Remaining questions, Pros, cons, and open questions of TDD, Retrospective on MDD versus TDD,	
	3	Software Testing Excellence: Craftsmanship, Best practice of software testing,	
1st week of JULY 24	1	Top 10 best practices for software testing excellence.	**JK**
	2	**Test**	
	3	**Revision**	

Semester	**VI**	**Paper**	**CA-E2-Elective II**
Name of the Department	**Computer Science**	**Subject Title**	**OPERATION RESEARCH**
Week/Month & Date (Preferably)	**Day**	**Portions Planned**	**Teacher VINUTHA V**
4th week of March 2024	1	Origin of Operation Research, Historical Standpoint, Methodology, Different Phases.	VV
	2	Characteristics, Scope and Application of Operation Research.	VV
	3	Assignment Problem: Formulation, Solutions to assignment problems by Hungarian method.	VV
1st Week of April 2024	1	Balanced Assignment Problem solving.	VV
	2	Balanced Assignment Problem solving.	VV
	3	Unbalanced Assignment Problem solving.	VV

2nd week of April 2024	1	Maximization assignment problems.	VV
	2	Transportation Problem: definition, Linear form	VV
	3	Solution methods: North west corner Method. Least cost method	VV
3rd week of April 2024	1	Vogel's approximation method	VV
	2	Unbalanced problems	VV
	3	Degeneracy in transportation	VV
4th week of April 2024	1	Modified Distribution method	VV
	2	Modified Distribution method	VV
	3	Sequencing and Game Theory -Basic assumptions, sequencing- n jobs through two machines model – n jobs through three machines model.	VV
1st Week of May 2024	1	Game Theory: Definition, Pure Strategy problems	VV
	2	Saddle point, Max-Min and Min-Max criteria	VV
	3	Principle of Dominance	VV
2nd Week of May 2024	1	Solution of games with Saddle point.	VV
	2	Mixed Strategy problems.	VV
	3	Solution of 2X2 games by Arithmetic method	VV
3rd week of May 2024	1	Solution of 2Xn m by graphical method.	VV
	2	Solution of mX2 by graphical method.	VV
	3	Network Problems: Shortest Path problem	VV
4th week of May 2024	1	Internal Test	VV
	2		VV
	3		VV
	1	Minimum spanning tree problem.	VV

5th week of May 2024	2	Project Management: Introduction, Construction of networks	VV
	3	Fulkerson's rule for numbering the nodes	VV
1st week of June 2024	1	Critical path method to find the expected completion time of a project,	VV
	2	Determination of floats in networks	VV
	3	PERT networks	VV
2nd week of June 2024	1	Determining the probability of completing a project	VV
	2	Predicting the completion time of a project.	VV
	3	Predicting the completion time of a project.	VV
3th week of June 2024	1	Linear Programming: Linear Programming Problem Formulation	VV
	2	Graphical solution	VV
	3	Simplex method	VV
4th Week of June 2024	1	Artificial variables technique	VV
	2	Big-M method	VV
	3	Big-M method	VV
1st week of July 2024	1	Revision	VV
	2	Revision	VV

Name of the Department	**Computer Science**	**Course: BSc VI Semester** **Subject Title:** **CA-C13T: PYTHON PROGRAMMING**	
Semester	**VI**		
Week/Month	**Day**	**Portions Planned for 1 hour**	**Teacher**
1ST week of APRIL	1	Python Programming Language: Python Interpreter/Shell, Identifiers, Keywords, Statements and Expressions	
	2	Variables, Operators, Precedence and Associativity, Data types,Indentation, Comments, Reading Input, Print Output	

			BL
	3	Type Conversions, The type() function and Is operator	
	4	Dynamic and Strongly Typed Language.Control Flow Statements	
2 nd week of APRIL	1	The if Decision Control Flow Statement, The if…else DecisionControl FlowStatement, The if…elif…else Decision Control Statement, Nested if Statement	
	2	The while Loop, TheforLoop, The continue and break Statements.	
	3	Functions: Built-In Functions, Commonly Used Modules, Function Definition and Calling the Function,	
	4	The return Statement and void Function,	
3 rdweek of APRIL	1	Scope and Life time of Variables	
	2	Default Parameters	
	3	Command Line Arguments.	
	4	Strings: Creating and Storing Strings	
4 th week of APRIL	1	Basic String operations	
	2	Accessing Characters in StringbyIndexNumber	
	3	String Slicing and Joining	
	4	String methods	
1ST week of MAY	1	Lists: Creating Lists, BasicListOperations, Indexing and Slicing in Lists	
	2	Built-In Functions Used on Lists	
	3	List Methods, The del Statement	
	4	Dictionaries:Creating Dictionary	
2nd week of MAY	1	value pairs in Dictionaries	BL
	2	Built-In Functions Used on Dictionaries	
	3	Dictionary methods	
	4	Tuples and Sets:	
3rd week of MAY	1	Creating Tuples	
	2	Basic Tuple Operations	
	4	Indexing in Tuples	
	4	Slicing in Tuples	
4th week of MAY	1	Built-In Functions Used onTuples	
	2	Relations between Tuples and Lists	
	3	Relations between Tuples and Dictionaries	
	4	Tuple Methods	
5th week of MAY	1	Using zip() Function	
	2	Sets	

	3	Set Methods,	
	4	Frozenset.	
1ST week of JUNE	1	Files: Types of files, Creating and Reading Text Data, File Methods to Read and Write Data, Reading and Writing Binary Files	
	2	The Pickle module, Reading and writing CSV files	
	3	Object-Oriented Programming: Classes and Objects, Creating Classes in Python	
	4	Creating Objects in Python, The Constructor Method	
2nd week of JUNE	1	Classes with Multiple Objects	
	2	Class Attributes versus Data attributes,	
	3	Encapsulation	
	4	Inheritance	
3rd week of JUNE	1	The Polymorphism	
	2	Internals	
	3	Data Visualization	
	4	Presentation	
4th week of JUNE	1	Generating Data-Installing Matplotlib	
	2	Plotting a Simple Line Graph, Random Walks, Rolling Dice with Plotly	
	3	Downloading Data- The CSV File Format, Mapping Global Data Sets: JSON Format	
	4	Characteristics of multiprocessors	
1st week of JULY	1	Distributed Memory MIMD Architectures	
	2	Interconnection structures.	
	3	Working with APIs: Using a Web API	
	4	Visualizing Repositories Using Plotly	
2nd week of JULY	1	Revision	
	2	Revision	
	3	test	
	4	Test	