

**GOVERNMENT ARTS COLLEGE (AUTONOMOUS), KARUR – 639 005**

**B.SC., COMPUTER SCIENCE - COURSE STRUCTURE UNDER CBCS SYSTEM**

(For the candidates admitted from the year 2011-2012 onwards)

SEMESTER	COURSE	SUBJECT TITLE	SUBJECT CODE	INSTR. HOURS WEEK	CREDIT	EXAM HOURS	MARKS		TOTAL	
							INT	ESE		
I	Tamil I	Tamil I	U11L1T1	6	3	3	25	75	100	
	English – I	English I	U11L1E1	6	3	3	25	75	100	
	Core Course – I	Programming in ‘C’	U11CS1C1	6	5	3	25	75	100	
	Core Course – II	‘C’ and Cobol Programming Lab	-	3	-	-	-	-	-	
	First Allied Course – I	Applied Mathematics – I	U11MM1A1	5	3	3	25	75	100	
	First Allied Course – II	Applied Mathematics – II	-	2	-	-	-	-	-	
	Environmental Studies	Environmental Studies	UES1	2	2	3	25	75	100	
				<b>30</b>	<b>16</b>				<b>500</b>	
II	Tamil II	Tamil II	U11L2T2	6	3	3	25	75	100	
	English II	English II	U11L2E2	6	3	3	25	75	100	
	Core Course II	‘C’ and Cobol Programming Lab	U11CS2C2P	3	4	3	25	75	100	
	Core Course III	Programming in COBOL	U11CS2C3	6	5	3	25	75	100	
	First Allied Course II	Applied Mathematics – II	U11MM2A2	2	4	3	25	75	100	
	First Allied Course III	Applied Mathematics – III	U11MM2A3	5	3	3	25	75	100	
	Value Education	Value Education	UVE2	2	2	3	25	75	100	
				<b>30</b>	<b>24</b>				<b>700</b>	
III	Tamil III	Tamil III	U11L3T3	6	3	3	25	75	100	
	English III	English III	U11L3E3	6	3	3	25	75	100	
	Core Course – IV	Data Structures & C++	U11CS3C4	6	5	3	25	75	100	
	Core Course V Practical	Object Oriented Programming Lab	-	3	-	-	-	-	-	
	Second Allied Course I	Applied Physics I	U11PH3A1	5	3	3	25	75	100	
	Second Allied Course II	Applied Physics II Practical	-	2	-	-	-	-	-	
	Non Core Elective I	Discrete Mathematical Structure	U11MM3N1	2	2	3	25	75	100	
				<b>30</b>	<b>16</b>				<b>500</b>	
IV	Tamil IV	Tamil IV	U11L4T4	6	3	3	25	75	100	
	English IV	English	U11L4E4	6	3	3	25	75	100	
	Core Course V Practical	Object Oriented Programming Lab	U11CS4C5P	2	4	3	25	75	100	
	Core Course VI	Java Programming	U11CS4C6	5	5	3	25	75	100	
	Second Allied Course II	Applied Physics II Practical	U11PH4A2P	2	4	3	25	75	100	
	Second Allied Course III	Applied Physics III	U11PH4A3	5	3	3	25	75	100	
	Skill Based Elective I	Office Automation and HTML	U11CS4S1	2	4	3	25	75	100	
	Non Core Elective II	Formal Languages and Automata Theory	U11MM4N2	2	2	3	25	75	100	
				<b>30</b>	<b>28</b>				<b>800</b>	
V	Core Course VII	Data Communication and Network	U11CS5C7	5	5	3	25	75	100	
	Core Course VIII	Relational Database Management System	U11CS5C8	5	4	3	25	75	100	
	Core Course IX	Microprocessor and its Applications	U11CS5C9	5	4	3	25	75	100	
	Core Course X	VB and Oracle Lab	U11CS5C10P	6	4	3	25	75	100	
	Elective Course I	Computer Graphics	U11CS5E1	5	5	3	25	75	100	
	Skill Based Elective II	Visual Basic	U11CS5S2	2	4	3	25	75	100	
	Skill Based Elective III	Desktop Publishing	U11CS5S3	2	4	3	25	75	100	
					<b>30</b>	<b>26</b>				<b>600</b>
	Core Course XI	Multimedia Lab	U11CS6C11P	6	5	3	25	75	100	
	Core Course XII	Operating System	U11CS6C12	6	5	3	25	75	100	
	Core Course XIII	Software Engineering	U11CS6C13	6	5	3	25	75	100	
	Elective Course II	Data Mining	U11CS6E2	5	5	3	25	75	100	
	Elective Course III	Multimedia and its Applications	U11CS6E3	6	4	3	25	75	100	
Extension Activities	Extension Activities			1						
	Gender Education	8UEA6	1	1	3	25	75	100		
				<b>30</b>	<b>30</b>				<b>700</b>	
<b>TOTAL</b>				<b>180</b>	<b>140</b>				<b>3800</b>	

Sl. No.: 1114

Subject Code: U11CS1C1

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR-05

**B.Sc ., Computer Science – I SEMESTER – CORE COURSE -I**

(For the candidates admitted from 2011-12 onwards)

**PROGRAMMING IN C**

- UNIT- I** Evaluation and Application of C – Structure of C Program – Data Types – Declarations – Operators – Expressions – Type Conversions – Built – In – Functions.
- UNIT- II** Data Input and Output – Control Statements ; IF, ELSE – IF, GOTO, SWITCH, WHILE – DO, DO – WHILE, FOR, BREAK and CONTINUE
- UNIT-III** Functions – Defining and Accessing Functions – Passing Parameters of Functions – Arguments – Recursive Functions – Storage Classes – Arrays: Defining and Processing Arrays – Multi Dimensional Arrays – Passing Arrays to Functions – Arrays and Strings – String Functions – String Manipulations.
- UNIT-IV** Pointers – Pointer Declarations – Operations on Pointers – Pointers to Functions – Pointers and Strings – Pointers and Arrays – Array Pointers – Structures – Structures and Pointers – Unions.
- UNIT-V** Data Files – Opening, Closing and Processing Files – Files with Structures and Unions – Register Variables – Bitwise Operations – Macros – Preprocessors.

**Text Book:**

1. “Programming in C” – E. Balagurusamy – Tata McGraw Hill publications.

**Reference Book:**

1. “Programming with C” – Byron S. Gottfried – Schaum’s outline Series –Tata McGraw Hill Publications.
2. “Let us C” – Yashawanth Kanetkar – BPB Publications.

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**B.Sc ., Computer Science- I & II - SEMESTER – CORE COURSE -II**

(For the candidates admitted from 2011-12 onwards)

**C AND COBOL PROGRAMMING - LAB**

**C PROGRAMMING LAB**

1. Solutions of Quadratic Equations (All Cases).
2. Sum of Series (Sine, Cosine,  $e^x$ )
3. Ascending and Descending Order of Numbers Using Arrays (Use it to find largest and Smallest Numbers).
4. Sorting of Names in Alphabetical Order.
5. Matrix Operations (Addition, Subtraction, Multiplication – Use Functions)
6. Finding Factorials, Generating Fibonacci Numbers using Recursive functions.
7. String Manipulations without using String Functions (String Length, String Concatenation, String Copy, Palindrome checking, Counting Words and Lines in Strings – Use functions and pointers)
8. Bi – Section and Newton – Raphson method
9. Gauss elimination method
10. Euler and Raunge Kutta (II order only) method.
11. Trapezoidal and Simphsons  $1/3^{\text{rd}}$  rule.
12. Creation and Processing of Sequential Files for Payroll and Mark List Preparations (use Structures for Record description).

**COBOL PROGRAMMING LAB**

1. Programs using DISPLAY & ACCEPT verb.
2. Pay roll Program
3. Mark list Processing Program
4. Invoice Preparation program
5. Inventory Program
6. Sales Analysis ( Using table handling)
7. Sequential File Creation and Processing
8. Indexed Sequential File Creation and Processing
9. Sorting and Merging Programs
10. Programs using SCREEN SECTION.

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GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR-05

**B.Sc ., Computer Science - II- SEMESTER – CORE COURSE -III**

(For the candidates admitted from 2011-12 onwards)

**COBOL PROGRAMMING**

- UNIT- I** Preliminaries – Division of COBAL – Coding form – Structure of COBAL Program – INDENTIFICATION DIVISION – ENVIRONMENTAL DIVISION – CONFIGURATION SECTION – level structure – PICTURE clause – VALUE clause – FILE SECTION – Editing Characters – PROCEDURE DIVISION – Structure – Basic verbs – ACCEPT, DISPLAY, MOVE – Arithmetic verbs – COMPUTE verb – Input and Output Verbs.
- UNIT- II** Sequence Control Verbs – Conditional Verb – Different types of Conditions – IF – Nested IF Statement – GOTO with DEPENDING clause – ALTER, EXIT statements – Usage Clause – SYNCHRONIZED Clause - JUSTIFIED clause – REDEFINES clause – RENAMES clause – SIGN clause – Elementary and Group MOVE – MOVE CORRESPONDING – ROUNDED – ON SIZE ERROR Option.
- UNIT-III** PERFORM VERB - Table Handling – OCCURS Clause – Multidimensional Tables – PERFORM TIMES – PERFORM UNTIL – PERFORM VARYING – PERFORMS VARYING – PERFORMS VARYING – AFTER – SET – SEARCH Verb – Character Handling – EXAMINE Verb – INPECT Verb – STRING and UNSTRING Verb
- UNIT-IV** File Organization – Types – Sequential Files – Files Characteristics – File Description – Statement for Sequential Files – OPEN, CLOSE, WRITE AND REWRITE Statements – Sequential File with Variable Length records – I-O- CONTROL Paragraph – SORT and MERGE Features – Simple MERGE Verb – INOUT and OUTPUT Procedure in SORT Statements – MEMORY SIZE Clause
- UNIT-V** Indexed Sequential Files – FILE – CONTROL Paragraph for Indexed File – Procedure Division Statements for Index Files – File Description for Relative and Index file – DECLARATIVES and FILE STATUS Clause – Direct Organization – REPORT WRITER – General Format o REPORT – FILE SECTION – REPORT CLAUSE – Report Generation.

**Text Book:**

“COBAL PROGRAMMING” M.K.ROY, D. GHOSE DASTIDAR – Tata McGraw Hill Publishers

**Reference Book:**

1. “Programming with Modern Structured COBOL “Larry R. Newcomer – McGraw Hill International Editions.

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Sl. No.: 1316

Subject Code: U11CS3C4

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR-05

**B.Sc ., Computer Science – III SEMESTER – CORE COURSE IV**

(For the candidates admitted from 2011 -12 onwards)

### DATA STRUCTURE AND C++

#### UNIT – I

Arrays: axiomatization-ordered lists-representation of arrays- stacks and queues: fundamentals – evaluation of expressions- linked lists: singly linked list- linked stack and queues.

#### UNIT – II

Trees: basic terminology-binary trees-binary tree representation - binary tree traversal – Graphs :terminology and representation – traversals connected component and spanning trees – Internal sorting : searching- insertion sort -quick sort-heap sort.

#### UNIT – III

Principles of Object Oriented Programming – Tokens expressions and control structures – functions in C++

#### UNIT – IV

Classes and objects – constructors and destructors – parameterized constructors – multiple constructors in a class – constructors with default arguments – destructors – operator overloading and type conversions :Defining operating overloading- overloading unary operators – overloading binary operators.

#### UNIT – V

Inheritance: Extending classes: introduction – defining derived classes – single inheritance – making a private member inheritable – multilevel inheritance – multiple inheritance – hierarchical inheritance – hybrid inheritance – pointers, virtual function and polymorphism: pointers to objects – this pointer – managing console I/O operations: C++ streams – C++ streams classes – unformatted I/O operations.

#### TEXT BOOKS

- 1) Fundamentals of Data Structures by Ellis Horowitz – Galgotia Books
- 2) Object oriented programming with C++ by E.Balagurusamy – 2<sup>nd</sup> Edition TMH

Ref. Books:

1. “Let us C++” – Yashwant Kanetkar – BPB Publications, 1999.
  2. “Programming with C++” – John R.Hubbard – Schaum’s outline series, 1996.
- Data structures – Lipschutz, TMH, Schaums outline series

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Sl. No.: 14P6

Subject Code: U11CS4C5P

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR-05

**B.Sc ., Computer Science – III & IV - SEMESTER – CORE COURSE - V**

(For the candidates admitted from 2011 -12 onwards)

## **OOP LAB**

### **C++ Programming Lab**

1. Write a C++ program to create a Student Class
2. Write a C++ program to implement constructors and destructors
3. Write a C++ program to implement Matrix Manipulation
4. Write a C++ program using friend and static function
5. Write a C++ program using operator overloading
6. Write a C++ program using function overloading
7. Write a C++ program to implement multiple inheritance
8. Write a C++ program to implement multilevel inheritance
9. Write a C++ program to implement stack using array
10. Write a C++ program to implement queue using linked list
11. Write a C++ program to sort N numbers using quick sort
12. Write a C++ program for insertion sort

### **JAVA Programming Lab**

13. Program to implement simple classes to understand objects, member functions
14. Program to implement constructors
15. Program to Implement array and Vectors
16. Program to implement String Handling
17. Program using Inheritance
18. Program to implement method overriding
19. Program to develop User defined Packages in Java
20. Program to implement Interfaces
21. Program to implement Multi Threading
22. Program to implement Exception Handling Mechanism in Java

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**Sl. No.:** 1419

**Subject Code:** U11CS4C6

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR-05

**B.Sc ., Computer Science – IV - SEMESTER – CORE COURSE - VI**

(For the candidates admitted from 2011 -12 onwards)

**JAVA PROGRAMMING**

**Unit – I**

Fundamentals of Object Oriented Programming – java Evolution – Overview of Java Language – Data Types , variables , arrays – Operators – Control statements.

**Unit – II**

Introduction to classes – class fundamentals – Declaring objects – Constructors – methods – overloading methods – Nested and Inner classes- String handling.

**Unit – III**

Inheritance – method overriding – Abstract class - Packages – Interfaces - Exception handling – Types of exception – try and catch – nested try statements – multithreaded programming

**Unit – IV**

Stream I/O and Files : Java I/O classes and interfaces – File – The Stream classes – the byte streams – character streams – using stream I/O – serialization – stream benefits.

**Unit – V**

Applet Class – Applet Architecture – The HTML Applet Tag – Passing parameters in Applets.

**Text Book:**

Java 2 Complete Reference , Herbert Schildt, Tata McGraw Hill , 4<sup>th</sup> Edition 2001.

**Reference Book** : Programming in Java “ E.Balagurusamy “ TMH

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GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR-05

**B.Sc ., Computer Science – IV SEMESTER – SKILL BASED ELECTIVE I**

(For the candidates admitted from the year 2011 -12 onwards)

OFFICE AUTOMATION AND HTML

**Unit I**

Word – Creating Word Documents – Creating Business Letters using wizards – Editing Word Documents – Inserting Objects – Formatting documents –spelling and grammar check – Word Count, Auto Correct – Working with tables – Saving, opening and closing documents – Mail Merge.

**Unit II**

Introduction to Spread Sheet (MS –Excel) – Introduction to spread sheets – entering and editing text, numbers and formulas – Inserting rows and columns- Building Worksheets – Creating and formatting charts – Application of Financial and Statistical functions

**Unit III**

MS -Power Point- Creating a simple presentation – Creating, inserting and deleting slides – Saving a Presentation- Animation

**Unit IV**

Introduction to HTML : Designing a Home Page – HTML Document – Anchor Tag – Hyperlinks – Head and Body Sections – Header Section – Title – Links – Colorful Pages – Comments – Body Section – Heading – Horizontal Ruler – Paragraph – Tabs – Images and Pictures – Lists and their Types – Table Handling.

**Unit V**

Frames : Frameset Definition – Frame Definition – Nested Framesets – Forms : Forms and their elements.

**Text Books**

- 1) MS Office 2000 – Sanjay Saxena, Vikas Publishing House
- 2) World Wide Web Designing, C.Xavier, Tata McGraw Hill, 2000.

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Sl. No.: 1317

Subject Code: U11CS3N1

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR-05

**B.Sc ., – III SEMESTER – NON-CORE ELECTIVE – I**

**(FOR MATHEMATICS MAJOR)**

(For the candidates admitted from the year 2011 -12 onwards)

**FUNDAMENTALS OF INFORMATION TECHNOLOGY**

**UNIT – I**

Introduction to Computers: Introduction, types of computer - characteristics of computers - classification of digital computer system - functions and components of a computer.

**UNIT – II**

Number system- memory units – auxiliary storage devices – input devices – output devices – decimal numbers system- binary number system- conversion-complements, Octal, Hexadecimal.

**UNIT – III**

Introduction to Computer software, operating systems – programming Languages – General software features and Trends

**UNIT – IV**

Database management system: Data processing – Introduction to Database management system – database design – Distributed system- Computer networks

**UNIT – V**

Internet and World Wide Web – Electronic mail – intranets – introduction to multimedia – multimedia tools – electronic commerce

**TEXT BOOK:**

Fundamentals of Information Technology – Alexis Leon, Mathews Leon – Leon Vikas publishing PVT Ltd., New Delhi 1999.

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Sl. No.: 1421

Subject Code: U11CS4N2

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR-05

**B.Sc .,- IV SEMESTER – NON –CORE ELECTIVE II**

**(FOR MATHEMATICS MAJOR)**

(For the candidates admitted from the year 2011 -12 onwards)

**OFFICE AUTOMATION AND HTML**

**Unit I**

Word – Creating Word Documents – Creating Business Letters using wizards – Editing Word Documents – Inserting Objects – Formatting documents –spelling and grammar check – Word Count, Auto Correct – Working with tables – Saving, opening and closing documents – Mail Merge.

**Unit II**

Introduction to Spread Sheet (MS –Excel) – Introduction to spread sheets – entering and editing text, numbers and formulas – Inserting rows and columns- Building Worksheets – Creating and formatting charts – Application of Financial and Statistical functions

**Unit III**

MS -Power Point- Creating a simple presentation – Creating, inserting and deleting slides – Saving a Presentation- Animation

**Unit IV**

Introduction to HTML : Designing a Home Page – HTML Document – Anchor Tag – Hyperlinks – Head and Body Sections – Header Section – Title – Links – Colorful Pages – Comments – Body Section – Heading – Horizontal Ruler – Paragraph – Tabs – Images and Pictures – Lists and their Types – Table Handling.

**Unit V**

Frames: Frameset Definition – Frame Definition – Nested Framesets – Forms : Forms and their elements.

**Text Books**

- 1) MS Office 2000 – Sanjay Saxena, Vikas Publishing House
- 2) World Wide Web Designing, C.Xavier, Tata McGraw Hill, 2000.

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Sl. No.: 1525

Subject Code: U11CS5C7

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR-05

**B.Sc ., Computer Science – V SEMESTER – CORE COURSE - VII**

(For the candidates admitted from the year 2011 -12 onwards)

**DATA COMMUNICATIONS AND NETWORKS**

**Unit I**

Data Communication – Networks – Protocols and Standard – Line configuration – Topology – Transmission Mode – Categories of networks – Internet works.

**Unit II**

The OSI Model – Functions of the layers – TCP/IP Protocols suite – Signals – Analog and Digital Signal – Data Transmission – Data Terminal Equipment – Data Circuit Terminals equipment – Modems.

**Unit III**

Transmission of Media – Guided Media – Unguided Media – Transmission Impairments – Media Comparison – Multiplexing – FDM – TDM – WDM. Error Detection and Correction – Types of errors – Detection – Vertical Redundancy Check (VRC) – Longitudinal Redundancy Check (LRC) – Cyclic Redundancy Check (CRC). Check Sum – Error Correction.

**Unit IV**

Switching – Circuit Switching – Packet Switching – Message Switching Networking and Internetworking Devices – Repeaters – Bridges – Routers – Gateways. Routing Algorithm – Distance Vector Routing – Link State Routing – Data Link Control – Discipline – Flow Control.

**Unit V**

Internet working : TCP/IP Protocol Suite – Client Server Model – Domain Name System – File Transfer Protocol (FTP) – Simple Mail Transfer Protocol (SMTP) – World Wide Web (WWW) – Hyper Text Transfer Protocol (HTTP).

**Text Book :** “Data Communications and Networks” – Behrouz A.Forouzan Second Edition, Tata McGraw Hill Edition.

**Reference Book :**

1. “Introduction to Networking” – Barry Nance, Fourth Indian Eastern Economy Edition.
2. “Computer Networks” – Andrew S. Tanenbaum 4<sup>th</sup> Edition Eastern Economy Edition, 2003.

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## GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR-05

**B.Sc ., Computer Science – V SEMESTER – CORE COURSE - VIII**

(For the candidates admitted from the year 2011 -12 onwards)

**RELATIONAL DATABASE MANAGEMENT SYSTEMS****Unit I**

Introduction – File and Database System – Data Abstraction – Instances and Schemas – Database Languages – Database System Structure – Database Administrator.

**Unit II**

Data Models – E-R- Diagram – Key Constraints – Weak Entity set and Strong Entity set – Extended ER features – ER diagram with relationships – Aggregate Functions – Relational Algebra – Relational Calculus

**Unit III**

SQL – Data Definition – Queries in SQL – Nested Sub queries – Modification of the Database – Views – Joined Relations – Embedded SQL – Dynamic SQL – Security and Authorization – Triggers.

**Unit IV**

Normalization – Types of Normalization – File organization – Organization of Records in files – Operations on Files – Heap Files – Sorted Files – Hashing Techniques – Dynamic Hashing – Indexing – B+ Tree Index Files – B tree Index Files.

**Unit V**

Transaction – Transaction Processing – Concurrency control – Object Oriented Database – Object Oriented Data Model – Inheritance – XML – Distributed Databases – Transparency – Data Mining – Data Warehousing.

**Text Book:**

**1. Abraham Silberschatz, Henry F.Korth and Sudarshan, “Database System Concepts”, Fourth Edition, McGraw-Hill, 2002.**

**Reference Books:**

1. Ramez Elmasri and Shamkant B.Navathe, “Fundamental Database System”, Third Edition, Pearson Education, 2003.
2. Raghuram Ramakrishnan, “Database Management System”, Tata McGraw-Hill, 2003.
3. Hector Garcia, Molina, Jeffrey D.Ullman and Jennifer Widom, “ Database System Implementation”, Pearson Education, 2000.
4. Alexis Leon and Mathews Leon, “Database Management Systems”, Vikas Publishing House Pvt Ltd, New Delhi, 2002.

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Sl. No.: 1527

Subject Code: U11CS5C9

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR-05

**B.Sc ., Computer Science – V SEMESTER – CORE COURSE - IX**

(For the candidates admitted from the year 2011 -12 onwards)

### **MICROPROCESSORS AND ITS APPLICATIONS**

#### **UNIT – I**

Evolution of Microprocessors – Single-chip Microcomputer – Memory – Buses – Memory Address Capacity of CPU – Intel 8085 – Instruction Cycle.

#### **UNIT – II**

Instruction set of Intel 8085 – Instruction and Data Formats – Addressing Modes – Status Flags – Intel 8085 Instructions – Programming of Microprocessors – Stacks and Subroutines –Micro Programming.

#### **UNIT – III**

Assembly Language Programming – Simple Examples – Addition and Subtraction – Complements – Shift – Masking – Finding Max and Min Number in an array – Arranging a series of numbers – Multibyte Addition and Subtraction.

#### **UNIT – IV**

Peripheral devices and interfacing – Address Space Partitioning – Memory and I/O Interfacing – Data Transfer Schemes – Interrupts of Intel 8085 – Interfacing Devices and I/O Devices – I/O Ports – Programmable Peripheral Interface.

#### **UNIT – V**

Microprocessor Applications – Delay Subroutines – Interfacing of 7 segment LED Displays – Frequency measurement – Temperature Measurement and Control – Water Level Indicator – Microprocessor Based Traffic Control.

**Text Book:** Fundamentals of Microprocessors and Microcomputers – Badri Ram – Fifth revised and enlarged edition – Dhanpat Rai publication – 2001.

**Reference Book:** Microprocessor Architecture, programming and application with the 8085/8080A – Romesh S.Ganokar – Penram International Publishers India 1997.

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GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR-05

**B.Sc ., Computer Science – V SEMESTER – CORE COURSE – X**

(For the candidates admitted from the year 2011 -12 onwards)

**VB and ORACLE Lab**

**VISUAL BASIC LAB**

1. Design a Form with text and label box, to check whether the given number
  - a. Armstrong number
  - b. Adam number
2. Program to perform the following using string functions
  - a. Reverse the string
  - b. Calculate the length of the string
3. Program to find
  - a. Current date and time
  - b. Day of given date
4. Designs a form with scroll bars for generate different colors.
5. Program to design a digital clock using timer control.
6. Design a form create a arithmetic calculator
7. Design a Notepad with common dialog control and menu driven options.
8. Design a form with popup menu.
9. Process students' mark list using data control
10. Process library maintenance using DAO
11. Develop a package for employee data processing
12. Design software for Inventory control system.
13. Design a software for Bank data processing
14. Develop a package for Library management System

**ORACLE LAB**

1. Execute a SQL Query with DDL commands (Create Alter, Drop the database)
2. Execute a SQL Query with DML Commands (Insert , Select , Update, Delete the values from the database)
3. Create and manipulate the table with Key constraints using Not Null, Unique, Primary Key, Foreign Key, Check constraints.
4. Demonstrate with Date functions, Character functions, and Aggregate functions.
5. Execute the Select query for Retrieving rows with sub queries.
6. Write a PL/SQL program to find reverse a string.
7. Demonstrate a Control structures using PL/SQL programs
8. Write a PL/SQL program to split a student table into pass and fail table using cursors.
9. Write a PL/SQL program to join a two different table into one using cursors.
10. Write a PL/SQL program to fire a Trigger when update a bank table on Sunday.

Sl. No.: 1528

Subject Code: U11CS5E1

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR-05

**B.Sc ., Computer Science – V SEMESTER – ELECTIVE COURSE – I**

(For the candidates admitted from the year 2011 -12 onwards)

## COMPUTER GRAPHICS

### UNIT-I

**Output Primitives:** Points and Lines – Line-Drawing algorithms – Loading frame Buffer – Line function – Circle-Generating algorithms – Ellipse-generating algorithms. **Attributes of Output Primitives:** Line Attributes – Curve attributes – Color and Grayscale Levels – Area-fill attributes – Character Attributes.

### UNIT-II

**2D Geometric Transformations:** Basic Transformations – Matrix Representations – Composite Transformations – Other Transformations. **2D Viewing:** The Viewing Pipeline – Viewing Co-ordinate Reference Frame – Window-to-Viewport Co-ordinate Transformation - 2D Viewing Functions – Clipping Operations – Line, polygon and text clipping.

### UNIT-III

**3D Concepts:** 3D Display Methods – 3D Graphics Packages. **3D Object Representations:** Polygon Surfaces – Curved lines and Surfaces – Quadric Surfaces – Super quadrics – Blobby Objects – Spline representations. **3D Geometric and Modeling Transformations:** Translation – Rotation – Scaling – Other Transformations – Composite Transformations – 3D Transformation translation functions..

### UNIT IV

3D viewing – viewing pip line – viewing co-ordinates – projections – projection transformation – parallel projection transformations – perspective projection transformations – clipping – Hardware implementations – 3D viewing functions

### UNIT-V

**Visible-Surface Detection Methods:** Classification of Visible-Surface detection algorithms – Back-Face Detection – Depth-Buffer Method – A-Buffer method- Scan- Line Method – Depth-Sorting Method – BSP-Tree Method – Area-Subdivision Method – Octree Methods – Ray-casting Methods – Curved surfaces – Wire frame Methods – Visibility-Detection functions.

**Text Books:** COMPUTER GRAPHICS – Donald Hearn, M. Pauline Baker, 2nd edition, PHI.

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Subject Code: U11CS5S2

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR-05

**B.Sc ., Computer Science – V SEMESTER – SKILL BASED ELECTIVE – II**

(For the candidates admitted from the year 2011 -12 onwards)

## **VISUAL BASIC**

### **Unit I:**

Welcome to VB: What is Visual Basic – Features of Visual Basic – Visual Basic Editions – The Visual Basic Philosophy – Developing an Application. Creating an Application: Objectives – The Tool Box – Project Explorer – The Properties Window – The Form window – Understanding Projects – What does Visual Basic 6 have for you to create applications. Second Look at IDE Forms and Controls: Objectives – The Form – The Working with a Control – Opening the Code Window. Variables in Visual Basic: Objectives – What is Variable.

### **Unit II:**

Writing Code in VB: Objectives – The Code Window – The Anatomy of Procedure – Editor Features – The For..Next Statement – The Decision Maker If-loop – The while loop – Selective Case...End Select. Working with Files: objectives – Visual Basic File System Controls – Types of Files – Working with Files.

### **Unit III :**

Menus: Objectives – Building the User Interface. The First step – All about Menus. MDI Applications: Why MDI Forms – Features of an MDI Form – Loading MDI Forms and Child Forms – The Active Form property. Debugging Tips: Objectives – The Debugging methods. The common dialog.

Control: Working with the Common Dialog Control – The File Open Dialog Box – Saving a File – Changing the Color: Introduction to Databases: Why Databases – What is a Database – Which Database. Working with the Data Control: The Data Control – The Bound Controls – Caution – Coding.

### **Unit IV:**

DAO: The Jet Database Engine – Functions of the Jet Database Engine – SQL – The DAO Object Model. Additional Controls Available in VB 6.0 – Objectives – SSTab Control: ActiveX Data Objects – Why ADO – Establishing a Reference.

### **UNIT V:**

Crystal and Data Reports: Crystal Reports – Data Report – Distributing your Application: Objectives – Working with the Packaging and Deployment Wizard. activeX: Objectives – What is ActiveX – Why ActiveX. ActiveX and Web Pages: Objectives – ActiveX and Internet. ActiveX Documents: The Application Form Document. Sample Application in VB like Inventory Control.

### **Text Book:**

1) “Programming with Visual Basic 6.0” – Mohammad Azam – Vikas Publishing House Pvt. Ltd.

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**Sl. No.:** 1530

**Subject Code:** U11CS5S3

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR-05

**B.Sc ., Computer Science – V SEMESTER – SKILL BASED ELECTIVE – III**

(For the candidates admitted from the year 2011 -12 onwards)

**DESKTOP PUBLISHING**

**Unit: I**

Page Maker- Getting Started with Adobe Page Maker 7.0, Creating a Publication, Working with Text Modifying Text, Working with Multiple Pages

**Unit: II**

Working with Graphics, Formatting Text - Using Advanced Graphics, Adding Color and Using Mail Merge

**Unit III :**

Corel Draw- CorelDRAW Basics- Drawing and Selecting

**Unit IV:**

Working with Text- Working with Images

**Unit V:**

Dream weaver- Introduction to Dreamweaver CS4, Working with Dream weaver Websites.- Working with Web Pages, Working with HTML Tables, Framesets and Frames.

**Text Book:**

1) DTP Course Kit, Vikas Gupta, Dreamtech Press, 2009.

**Reference Books:**

- 1) Adobe PageMaker 7.0, Kevin Proot, Cengage Learning2
- 2) Dreamweaver CS4 in Simple Steps, Kogent Learning Solutions Inc, Dreamtech Press, 2010

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**Sl. No.:** 16P5

**Subject Code:** U11CS6C11P

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR-05

**B.Sc ., Computer Science – VI SEMESTER – CORE COURSE – XI**

(For the candidates admitted from the year 2011 -12 onwards)

**MULTIMEDIA LAB**

1. Prepare a slide show with text, sound and picture with animation in power point.
2. Prepare a power point show for your seminar preparation.
3. Develop a 5 minutes advertisement for Hindustan Lever Ltd by using various controls in power point.
4. Edit the photos with photo shop (various sizes and layers).
5. Change the background of the photo and demonstrate with various options to enhance the image in Photoshop.
6. Create a flash movie for bouncing a ball with in a four wall.
7. Create a flash movie with traffic light control.
8. Develop a flash movie for fill the bucket with water
9. Create an e-Invitation for college day with audio note using flash.
10. Create 30 second multi-media profile about your college using flash.
11. Animate a child walking on the street and child stops when a vehicle crosses using flash.
12. Create a windows movie with movie maker using audio, video, text and images.

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Sl. No.: 1619

Subject Code: U11CS6C12

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR-05

**B.Sc ., Computer Science – VI SEMESTER – CORE COURSE – XII**

(For the candidates admitted from the year 2011 -12 onwards)

### **OPERATING SYSTEM**

#### **UNIT 1**

Operating system objectives and function – operating system and user/computer interface, operating system as a resources manager: evaluation of operating system – serial processing sample batch system, time sharing system.

#### **UNIT II**

Process decryption, process control – process and threads. Concurrency – principles of concurrency. mutual exclusion – software support , dekker’s algorithm – mutual exclusion – hardware support, mutual message - deadlock – deadlock prevention, dead lock detection, Deadlock Avoidance – An Integrated deadlock strategy.

#### **UNIT III**

Memory management requirements- fixed partitioning , placement algorithm, reallocation in paging system –sample segmentation. Virtual memory-paging-address translation in a paging system. segmentation-organization, address translation in a segmentation system-combined paging and segmentation-Virtual memory-operating system-operating system software-fetch policy, placement policy and replacement policy, page buffering resident set management.

#### **UNIT IV**

Scheduling-Types of scheduling, scheduling algorithms, scheduling criteria, FIFO, Round Robin, Shortest Path next, shortest remaining time, highest response ration and feedback scheduling performance comparison-fair-share scheduling.

#### **UNIT V**

File management-files, file management systems, file system architecture, function of file management file directories-file sharing-secondary storage management-file allocation.

**Text Book(S):** 1) William Stallings, “Operating System”,Second edition,Maxvell McMillan, International Editions 1997.  
2) Charles Crowley, “Operaitng system-A Design Oriented Approach”, IRWIN publications chicago 1997.

#### **Reference Book(s):**

1. Dental H.M. “An Introduction to Operating Systems”,Addison Wesley Publishing Co.1998.
2. Saiberschatz A.Perterson J.L.Galvan P.”Operating System Concepts”, Third Edition, Addison,Wesley Publicising Co. 1992.

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Sl. No.: 1620

Subject Code: U11CS6C13

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR-05

**B.Sc ., Computer Science – VI SEMESTER – CORE COURSE - XIII**

(For the candidates admitted from the year 2011 -12 onwards)

## **SOFTWARE ENGINEERING**

### **UNIT – I**

Introduction – Socio-technical systems: Emergent system properties – Systems engineering – Organizations, people and computer systems-Legacy systems – Critical systems: A simple safety-critical system – system dependability-Availability and reliability – safety-Security-Software process: Software process models.

### **UNIT – II**

Project Management: Management activities-Project planning- Project scheduling-Risk management-Software requirements: Functional and non-functional requirements-User requirements-System requirements-Interface specification-The software requirements document-Requirements engineering process: Feasibility studies-Requirements elicitation and analysis-Requirements validation-Requirements management

### **UNIT – III**

Architectural design: Architectural design decisions-system organisation-Modular decomposition styles-Control styles-Reference architectures-Inter-organizational distributed computing-Application architectures: Data processing systems-Transaction processing systems-Event processing systems-language processing systems-User interface design: Design issues-The UI design process-User analysis-User interface prototyping-Interface evaluation.

### **UNIT – IV**

Rapid software development: Agile methods-Extreme programming-Rapid application development-Software prototyping- Software reuse: The reuse landscape-Design patterns-Generator-based reuse-Application frameworks-Application system reuse-Component-based software engineering: Components and component models

### **UNIT – V**

Verification and validation: Planning verification and validation-Software Inspections-Automated static analysis-Verification and formal methods-Software testing: System testing-Component testing-Test case design-Test automation-Critical systems validation: Reliability validation-Safety assurance-Security assessment-Software cost estimation: Software productivity-Estimation techniques-Algorithmic cost modeling-Project duration and staffing.

**Text Book** : Software Engineering, Somerville, 8<sup>th</sup> Edition , Pearson Education..

### **Reference Book**

1. Roger S.Pressman, "Software Engineering. A Practitioner's Approach", Sixth Edition Pearson Education.
2. Richard Fairly, "Software Engineering Concepts", Tata McGraw Hill, 1988.

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Sl. No.: 1621

Subject Code: U11CS6E2

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR-05

**B.Sc ., Computer Science – VI SEMESTER – ELECTIVE COURSE - II**

(For the candidates admitted from the year 2011 -12 onwards)

### **DATA MINING**

#### **UNIT – I**

**Introduction:** Data mining application – data mining techniques – data mining case studies- the future of data mining – data mining software

#### **UNIT – II**

**Association rules mining: Introduction-** basics- task and a naïve algorithm- apriori algorithm – mining frequent pattern without candidate generation (FP-growth) – performance evaluation of algorithms.

#### **UNIT – III**

**Classification:** Introduction – decision tree – over fitting and pruning - DT rules-- naïve bayes method- estimation predictive accuracy of classification methods

#### **UNIT – II**

**Cluster analysis:** cluster analysis – types of data – computing distances-types of cluster analysis methods - partitioned methods-dealing with large databases – quality and validity of cluster analysis methods - cluster analysis software.

#### **UNIT – V**

**Web data mining:** Introduction- web terminology and characteristics- locality and hierarchy in the web- web content mining-web usage mining- web structure mining – web mining software

**Text Book:** “Introduction to Data mining with case studies”, G.K. Gupta, PHI Private limited, New Delhi, 2008.

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Sl. No.: 1622

Subject Code: U11CS6E3

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR-05

**B.Sc ., Computer Science – VI SEMESTER – ELECTIVE COURSE - III**

(For the candidates admitted from the year 2011 -12 onwards)

**MULTIMEDIA AND ITS APPLICATIONS**

**Unit I :** Introduction to Multimedia – CDROM and the Multimedia highway – Use of Multimedia – Introduction to making multimedia – Multimedia skills.

**Unit II :** Multimedia hardware and software – Maintosh and windows production platforms – Connections – Memory and storage devices – Input devices – Output devices – Communication devices – Basic software tools – Text editing and word processing tools – Painting and drawing tools – 3-D modeling and animation tools – Image editing tools – sound editing tools – Animation, video and digital movie tools – Making instant multimedia – Multimedia authoring tools.

**Unit III :** Multimedia Building Blocks – Text – Fonts and Faces – Using Text in Multimedia – Computers and Text – Font Editing and Design Tools – Hypermedia and Hypertext – Sound – Multimedia System Sounds – MIDI Versus Digital Audio – Digital Audio – Making MIDI Audio – Audio File Formats – Images – Making Still Images – Color – Image File Formats – Animation – Principal of Animation – Making Animations That Work – Video – How Video Works – Integrating Video – Video – Video Tips – Recording Formats – Digital Video.

**Unit IV :** Multimedia and the Internet – The Internet and How it Works – Internetworking – Connections – Internet Services – The World Wide Web and HTML – Dynamic Web Pages – Multimedia on the Web – Tools for the World Wide Web – Web Services – Web Browsers – Plug-ins and Delivery Vehicles – Designing for the World Wide Web – Working on the Web – Text for the Web – Images for the Web – Sound for the Web – Animation for the Web.

**Unit V :** Assembling and Delivering a Project – Planning and Costing – Project Planning – Estimating – Designing and Producing – Content and Talent – Using Content Created by others – Using Content Created for a Project – Delivering – Testing – Preparing for Delivery – Delivering on CD – ROM – Delivering on World Wide Web.

**Text Book :** Tay Vaughan – “Multimedia Making It Work” Fifth Edition — Tata McGraw Hill Edition 2001.

**Reference Books :** 1. Multimedia In Action – James E.Shuman – Vikas Publishing House.  
2. Multimedia An Introduction – John Villamil – Casanova, Louis Moliva, PHI.

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