

**ST.JOSEPH'S COLLEGE OF ARTS AND SCIENCE (AUTONOMOUS),
CUDDALORE-607 001.**



**POST GRADUATE AND RESEARCH DEPARTMENT OF
COMPUTER APPLICATIONS**

BACHELOR OF COMPUTER APPLICATIONS (B.C.A.)

SYLLABUS

2016- 2017

BACHELOR OF COMPUTER APPLICATIONS (B.C.A.)

CURRICULUM DESIGN TEMPLATE 2016 - 2017

Semester	Part	Subject Title	Sub Code	Hrs	Cr
		FIRST YEAR			
I	I	Tamil-I / Hindi-I / French-I	LTC101T	5	3
	II	English – I	LEC101S	5	3
	III	Main- Programming in C	CA101S	4	3
	III	Main- Digital Logic Fundamentals	CA102T	5	4
	III	Main Practical –I-Programming in C	CAP101T	3	2
	III	Allied -Mathematical Foundations	AMTCA101	5	4
	IV	Skill Based Course- Value Education	VE101T	3	2
			Total		30
II	I	Tamil-II / Hindi-II / French-II	LTC202T	5	3
	II	English – II	LEC202S	5	3
	III	Main –Object Oriented Programming using C++	CA203Q	5	4
	III	Main Practical – II Programming in C++	CAP202T	3	2
	III	Main – Fundamentals of Data Structures	CA204S	4	3
	III	Allied – Statistical Methods	ASCA202T	5	4
	IV	Skill Based Course-Dynamics of Personality	EPD201T	3	2
			Total		30
		SECOND YEAR			
III	III	Main- Programming using Sun Micros Technology (JAVA)	CA305Q	6	4
	III	Practical-III-Programming using Sun Micros Technology (JAVA)	CAP303Q	5	3
	III	Main-Computer Algorithms	CA306T	6	5
	III	Allied-Financial Accounting-I	ACCA301S	5	4
	III	Allied-Numerical Methods	AMTCA302	5	4
	IV	Skill Based Course-Environmental Science	EVS301S	3	2
			Total		30
IV	III	Main –Internet Technologies	CA407T	5	5
	III	Main- Advanced Java Programming	CA408T	6	4
	III	Main Practical-IV-Advanced Java Programming	CAP404T	5	3
	III	Allied-Resource Management Techniques	AMCA403S	5	5
	III	Allied-Organizational Behaviour	ACA401	5	5
	IV	Skill Based Course-Soft Skills	AOSS401S	4	4
			Total		30

Semester	Part	Subject Title		Hrs	Cr	
		THIRD YEAR				
V	III	Main- Relational Database Management Systems	CA509S	5	4	
	III	Main- Programming using Microsoft Tech.(ASP .Net using C#)	CA510T	5	4	
	III	Elective- I: Multimedia and Virtual Reality/Computer Graphics	ECA512S/ ECA512A	5	5	
	III	Elective-II: Data Communication Networks	ECA511	5	5	
	III	Practical: RDBMS -Oracle	CAP505T	5	3	
	III	Practical: Programming Using Microsoft Tech. (ASP .Net using C#)	CAP506T	5	3	
	Total				30	24
VI	III	Main- Open Source Technology-PHP	CA614Q	5	4	
	III	Main- Operating Systems	CA615S	5	4	
	III	Elective-I: Software Engineering	ECA616T	5	5	
	III	Elective-II : Computer Architecture	ECA613T	5	5	
	III	Practical –Programming in PHP	CAP607Q	5	3	
	III	Mini Project	JCA601	5	3	
	V	Extension Activities	EU601		2	
Total				30	26	

Elective-I:

- 1.Multimedia and Virtual Reality
- 2.Computer graphics
- 3.Cloud Computing

Elective-II:

- 1.Data Communication Networks
- 2.Network Security
- 3.Mobile Computing

Elective-III:

- 1.Software Engineering
- 2.Management Information system
3. Information System Design

Elective-IV:

- 1.Computer Architecture
- 2.Distributed Computing
- 3.Microprocessor and its Applications

I BCA	PROGRAMMING IN C	CA101S
SEMESTER-I		CREDIT - 3
MAIN		HRS/WK- 4

Objective:

To make the students abreast with the programming concepts and to master them C Language.

UNIT-I **[15 Hrs]**

C Fundamentals: Character set – Identifiers - keywords - Data Types-Constants – Variables –Declarations – Expressions - Statements-Operators - Library functions.

UNIT-II **[15 Hrs]**

Control Statements: Data Input/Output functions - Simple C programs - flow of control-control structures - switch, break and continue - Go to statement-comma operator.

UNIT-III **[15 Hrs]**

Functions: Defining, accessing functions - functions prototypes-passing arguments - call by value - call by reference - Recursions-storage classes.

UNIT-IV **[15 Hrs]**

Arrays: Defining and processing – passing arrays of functions- Arrays and string – Structures - passing structures to functions - self-referential structures - unions.

UNIT-V **[15 Hrs]**

Pointers: Declarations - passing pointers to functions - operation with pointers - pointer and arrays - arrays of pointers - structure and pointers – Files and its operations.

TEXT BOOKS:

1. E. Balagurusamy -Programming in Ansi C -Tata McGraw Hill Pub
2. Byron S.Gottfried - Schaum’s outline Theory and problems of programming with C. Tata McGraw Hill Pub
3. YeshwanthKanethkar -Let us C -.BPB Publications
4. K.R.Venugopal, S.R.Prasad -Mastering C – Tata McGraw Hill Pub

I BCA	DIGITAL LOGIC FUNDAMENTALS	CA102T
SEMESTER-I		CREDIT - 4
MAIN		HRS/WK- 5

Objective:

To get acquainted with the internals of the System logic circuits and to know the working principles of the computers.

UNIT-I **[12 Hrs]**

Number System: Binary number system - The Basic Gates - Boolean Algebra - Universal Gates - Boolean Laws and Theorem – Number system and its conversations.

UNIT-II **[12 Hrs]**

Simplification: Sum of products - Product of Sums - K-map simplifications - Don't care conditions-QuineMcclusky tabulation method.

UNIT-III **[12 Hrs]**

Combinational Arithmetic Circuits: Adders-Subtractors-full adder-subtractor-BCD Adder- ROM-PLA-Designing circuits using ROM/PLA

UNIT-IV **[12 Hrs]**

Combinational Logic Circuits: Multiplexers-Demultiplexers-Decoders: 1 of 16 Decoders-Encoders.

UNIT-V **[12 Hrs]**

Sequential Logic Circuit: Flip-Flops - Its types - RS Flip flop, JK Flip flop, D Flip flop, T and Master Slave. Counters and its types - Shift Registers and its types.

TEXT BOOKS:

1. Thomas C.Bartee Digital Computer Fundamentals- McGraw Hill Pub.
2. Malvino & Leach- Digital principles and applications –McGraw Hill Pub.
3. S.Ramalatha - Digital Computer Fundamentals
- 4 .M.Morris Mano -Digital Logic and Computer Design- -PHI

I BCA	PRACTICAL - PROGRAMMING IN C	CAP101T
SEMESTER-I		CREDIT - 2
PRACTICAL		HRS/WK- 3

Objective:

To make the students skilled in programming and to make them logically efficient and marketable in the programming Industry.

1. Write a C program to find the odd or even numbers for the range of given number.
2. Write a C program to find the sum of series
3. Write a C program to generate the Fibonacci series
4. Write a C program to check whether the given year is leap year or not.
5. Write a C program to reverse a given number.
6. Write a C program to find the given number is Armstrong or not.
7. Write a C program to display the following output
 - (a) *
* *

 - (b) 1
1 2
1 2 3
 - (c) 1
2 2
3 3 3
 - (d) 3 3 3
2 2
1
8. Write a C program to find the largest number among the three numbers.
9. Write a C program to find whether the person is eligible to vote or not
10. Write a C program to display the grade of the student by using conditional statement
11. Write a C program to display the arithmetic manipulation using Switch statement
12. Write a C program to find out the Factorial with and without using recursive function.
13. Write a C program to add a 2 numbers by using all functions.
14. Write a C program to swap 2 numbers without using the temporary variables.
15. Write a C program to find the length of the string with and without using string function
16. Write a C program to check whether the given string is Palindrome or not
17. Write a c program for the following matrices
 - (a) Addition Matrix (3X3)
 - (b) Subtraction Matrix (2X2)
 - (c) Multiplication Matrix (2X2)
 - (d) Transpose Matrix (3X3)
18. Write a C program to generate the numbers in ascending order.
19. Write a C program to display the name ,age ,mark, average and total for the 5 students by structure using array.
20. Write a C program to swap 2 numbers using pointer.

I BCA	Object Oriented Programming using C++	CA203Q
SEM - II		CREDIT - 4
MAIN		HRS/WK- 5

Objective:

To make the students get abreast with rich object oriented features with respect to C++.

UNIT-I **[15 Hrs]**

C++ fundamentals: Introduction to C++: Tokens, Keywords, Identifiers, Variables, Operators, Expressions and Control Structures-Arrays in C++ - CIN-COUT.

Unit-II **[15 Hrs]**

Principles of Object Oriented Programming(OOP): Evolution of C++ - Programming Paradigms – Key Concepts of OOP – Advantages of OOP – Usage of OOP and C++.

UNIT-III **[15 Hrs]**

OOPS Fundamentals: Classes and Objects: Constructors and Destructors; and Type of Constructors – Inheritance: Single Inheritance – Multilevel inheritance – Multiple inheritance – Hierarchical Inheritance – Hybrid Inheritance.

UNIT-IV **[15 Hrs]**

Functions: Inline Functions – Friend Function-Virtual Function-**Polymorphism:** Function Overloading - Operator Overloading.

Input and Output in C++ - Streams-Stream classes- Formatted and Unformatted console I/O operations-Member functions of istream class-manipulators-manipulators with parameters

UNIT-V **[15 Hrs]**

Working with Files: Classes for File Stream Operations – Opening and Closing a File – End-of-File Detection – File Pointers – Updating a File – Error Handling during File Operations – Command-line Arguments.

TEXT BOOKS

1. E.Balagurusamy-Object Oriented Programming with C++.TMH-1995
2. H.Schildt,C++: The Complete Reference,TMH-1998
3. Robert Lafore, Object Oriented Programming in Microsoft C++, Galgotia Publication.
4. Ashok N.Kamthane, Object Oriented Programming with ANSI & Turbo C++, Pearson Education, 2006.

I BCA	FUNDAMENTALS OF DATA STRUCTURES	CA204S
SEMESTER-II		CREDIT - 3
MAIN		HRS/WK- 4

Objective:

This subject will make the student get acquainted with different storage techniques inside the system.

UNIT-I

[12 Hrs]

Introduction: Definition of a Data structure – primitive and composite Data Types, Arrays, Operations on Array, Ordered lists.

UNIT-II

[12 Hrs]

Stacks and Queues: Stacks – Applications of Stack – Infix to Postfix Conversion, Recursion, Maze Problems – Queues – Operations on Queues-Queue Applications-Circular Queue.

UNIT-III

[12 Hrs]

Linked List: Singly Linked List – Operations, Application – Representation of a Polynomial, Polynomial Addition; Doubly Linked List – Operations, Applications – Ordering Books in a Library(Alphabetical Ordering)

UNIT-IV:

[12 Hrs]

Trees: Binary Trees –Representation- Conversion of Forest to Binary Tree– Tree Traversals

UNIT-V:

[12 Hrs]

Graph: Definition, Types of Graphs, Representation -Graph Traversal - Shortest Path (Dijkstra’s Algorithm.)

TEXT BOOKS

1. E.Horowitz and S.Shani Fundamentals of Data Structures in C++, Galgotia Pub.1999.
2. R.Kruse and N.Dale and S.C.Lily Pascal plus Data Structures Algorithms and Advanced Programming –Tata McGraw Hill-New Delhi(1990)

I BCA	- PRACTICAL OBJECT ORIENTED PROGRAMMING IN C++	CAP202T
SEMESTER-II		CREDIT - 2
PRACTICAL		HRS/WK- 3

Objective :

To implement all object oriented programming Concepts.

1. Program using Classes and Objects
2. Program using Constructor and destructor
3. Program using Function overloading and Inline functions
4. Program using Operator Overloading
5. Program using Inheritance
6. Program using friend functions

Programs using Data Structure Concepts

7. Implement PUSH, POP Operators of Stack using Arrays.
8. Implement add, delete Operators of a queue using Arrays.
9. Conversion of infix to postfix using stack Operations.
10. Binary tree traversals using recursion

II BCA	Programming using Sun Micros Tech-Java	CA305Q
SEMESTER-III		HRS/WK-6
MAIN		CREDIT-4

Objective:

To understand the power of Core JAVA and its Object Oriented Features.

UNIT - I

[18 Hrs]

Introduction to Java: Features of Java – Data Types – Variables – Arrays – Operators - Control Statements.

UNIT - II

[18 Hrs]

Classes and Objects: Constructors –Inheritance- Overloading method- Overriding methods – Using super – Abstract class.

UNIT - III

[18 Hrs]

Packages and Interfaces: Packages-Creating Packages –Importing Packages– Interfaces. **Exception Handling:** Try, Catch, Throws, Throw and Finally.

UNIT -IV

[18 Hrs]

Thread: Introduction to Thread-Multithread-implementation of multithread application using synchronization.

Streams: Simple Input Streams-Simple Output Streams – File Streams-

UNIT - V

[18 Hrs]

Strings: String classes-String Buffer classes.

Predefined Classes: Vector class, Random class, Calendar class, Date Class.

TEXT BOOKS:

1. Cray S. Horstman, Gray Cornell – Core Java 2 Vol. I and Vol. II – 7th Ed. PHI, 2000.
2. H. Schildt – Java2 [The Complete Reference] – Fourth Edition, TMH 1999.

REFERENCE BOOK:

Wesley, K. Arnold and J. Gosling – The Java Programming Language – Third Edition Addison – Wesley, 2000.

II BCA	COMPUTER ALGORITHMS	CA306T
SEMESTER- III		HRS/WK-6
MAIN		CREDIT-5

Objective:

To make the student equipped with different Time and Space Complexity based Algorithms.

UNIT-I

[18 Hrs]

Introduction: Algorithm-PSEUDO - How to analyze algorithms-Time and Space complexity-Asymptotic Notations.

UNIT-II

[18 Hrs]

Divide and Conquer: General method- Complexity analysis-Strassen's Matrix Multiplication-Quick sort-Merge sort.

UNIT-III

[18 Hrs]

Greedy method: General method- Shortest path-Algorithm-problems-0/1 Knapsack problem

UNIT-IV

[18 Hrs]

Dynamic Programming: General method-multistage graph-Traveling salesman problem

UNIT-V

[18 Hrs]

Traversal Techniques: Back Tracking- General method-Depth first search- Breadth first search.

TEXT BOOKS:

1. E.Horowitz.S.Sahni and S.Rajasekaran, Computer Algorithms Galgotia-1999.
2. G.Brassard and Brately- Fundamentals of Algorithmics, PHI 1996.

REFERENCE BOOK:

1. Goodman, S.E. and Hedentnelemi- Introduction to the Design and Analysis of Algorithms- McGrawHill publication.

II BCA	Programming using Sun Micros Tech-Java - PRACTICAL	CAP303Q
SEMESTER- III		HRS/WK-5
Practical		CREDIT-3

Objective :

To enable the students to learn the basic function of JAVA programming and to make students to acquire the skill in JAVA programming.

1. Finding area and Perimeter of a circle. Use Buffered Reader class.
2. Determining the order of numbers generated randomly using Random class.
3. Implementing and importing packages for simple application.
4. Implementing Interfaces-Arithmetic Manipulations.
5. Exception Handling.
6. Multithreading.
7. String Manipulation using String/StringBuffer class.
8. Usage of Calendar Class and manipulation
9. Application using File streams(Sequential File)
10. Application using File Streams(Random File)

II BCA	INTERNET TECHNOLOGIES	CA407T
SEMESTER – IV		HRS/WK-5
MAIN		CREDIT-5

Objective:

To give an introduction to Internet, HTML and to learn Java Script and how to add Java Script code to HTML page.

UNIT – I :

[15 Hrs]

Internet Connection Concepts : Internet Communication Protocols – Internet Hosts – Internet Protocol(IP) Addresses – Domain and Host Name - Servers and Clients – Ports and Port Numbers – Types of Internet Connections – Internet Service Providers(ISPs)

UNIT – II :

[15 Hrs]

World Wide Web Concepts : URLs and Transfer Protocols – HTML – Java and JavaScript – VBScript – Plug-ins – XML – Cascading Style Sheets(CSS) – Websites – Portals – Web Directories and Search Engines – Home Pages.

UNIT – III :

[15 Hrs]

HTML tags : History of HTML – Structure of HTML – Basic Tags of HTML - List – Linking Document – Frames – Graphics to HTML Documents.

UNIT - IV

[15 Hrs]

Style Sheet Basics : Introduction to CSS – Add Style to document – Creating Style Sheet rules – Style sheet Properties – Font – text – Color and Background Color – Box Properties.

UNIT – V :

[15 Hrs]

JavaScript : Introduction – Advantage of JavaScript – JavaScript Syntax – data type – Variable – Array – Operator & Expressions – Looping Constructors – Function – Dialog Box .

Text Books :

1. Thomas Pwell – “HTML and XHTML: The Complete Reference” – Tata McGrawHill,4th Edition 2003.
2. E. Stephen Mack and Janan Platt – “HTML 4.0” – BPB Publications
3. “Web Enable Commercial Application Development using HTML,DHTML,Javascript,PERL CGI” – BAYROSS, BPB Publications 2000.
4. “Internet & World Wide Web” How to Programe , Third Edition – H.M.Deitel, P.J. Deitel, A.B. Goldberg.

II BCA	Advanced Java Programming	CA408T
SEMESTER – IV		HRS/WK-6
MAIN		CREDIT-4

Objective:

To learn advanced concept of Java and make them to develop distributed application.

UNIT I **[18 Hrs]**

AWT Overview: Components, Container-AWT classes: Button, TextField, Checkbox-Layouts-Simple example using AWT. **Applet:** Introduction to Applet-Life Cycle of Applet.-Simple example using applet.

UNIT II **[18 Hrs]**

Networks: Network Basics-socket overview-Internet Addressing-DNS-TCP/IP-URL-Example using network concepts.

UNIT III **[18 Hrs]**

DataBase: JDBC-ODBC Driver-Connection class-Statement class-ResultSet class-Example using database (msaccess).

UNIT IV **[18 Hrs]**

RMI: Introduction to RMI-Architecture of RMI-A complete example using RMI.

UNIT V **[18 Hrs]**

Servlet: Servlet overview – your first servlet – servlet chaining – session management in servlet: Session Tracking-simple database program using Servlet.

TEXT BOOKS:

1. Cray S. Horstman, Gray Cornell – Core Java 2 Vol. I and Vol. II – 7th Ed. PHI, 2000.
2. H. Schildt – Java2 (The Complete Reference] – Fourth Edition, TMH 1999.

REFERENCE BOOK:

Wesley, K. Arnold and J. Gosling – The Java Programming Language – Third Edition Addison – Wesley, 2000.

II BCA	Organizational Behaviour	ACA401
SEMESTER - IV		HRS/WK-5
ALLIED		CREDIT-5

UNIT I: [15 Hrs]

FOCUS AND PURPOSE: Introduction to organizational behaviour: – Challenges facing the Management-Paradigm shift-New perspective of Management-Define Organizational Behaviour – Frame work – Organizational behaviour model.

UNIT II: [15 Hrs]

INDIVIDUAL BEHAVIOUR: Personality – types – Factors influencing personality – Theories -Perception Process-Social Perception- Attitudes-Motivation – Motivation Process –Hierarchy of work Motivation.

UNIT III: [15 Hrs]

GROUP BEHAVIOUR: Nature of Groups– Dynamics of Informal Groups-dysfunction of group – Work Team building - Communication.

UNIT IV: [15 Hrs]

LEADERSHIP AND POWER: Meaning – Importance – Leadership styles –Traditional Theories of Leadership-Modern Theoretical process of Leadership- Power and Politics.

UNIT V: [15 Hrs]

DYNAMICS OF ORGANIZATIONAL BEHAVIOUR:Organizational culture and climate – Factors affecting organizational climate – Importance of job satisfaction- Organizational change – Stress and Conflict.

TEXT BOOKS

1. Stephen P. Robins, Organisational Behavior, PHI Learning / Pearson Education, 11th edition, 2008.
2. Fred Luthans, Organisational Behavior, McGraw Hill, 11th Edition, 2001.

REFERENCES

1. Schermerhorn, Hunt and Osborn, Organisational behavior, John Wiley, 9th Edition, 2008.
2. UdaiPareek, Understanding OrganisationalBehaviour, 2nd Edition, Oxford Higher Education, 2004.
3. Mc Shane & Von Glinov, OrganisationalBehaviour, 4th Edition, Tata McGraw Hill, 2007.
4. Hellrigan, Slocum and Woodman, Organisational Behavior, Cengage Learning, 11th Edition 2007.
5. Ivancevich, Konopaske&Maheson, OranisationalBehaviour& Management, 7th edition, Tata McGraw Hill, 2008.

II BCA	ADVANCED JAVA PROGRAMMING-PRACTICAL	CAP404T
SEMESTER- IV		HRS/WK-5
PRACTICAL		CREDIT-3

Objective :

To enable the students to learn advanced level of JAVA programming and to make students to develop web oriented and distributed concepts.

1. To implement Bio-Data Information using Frame class with various controls.
2. Display different graphical symbols using Applet class.
3. To implement for sending a string from one system to another using TCP/IP.
4. Chatting Application using TCP/IP.
5. To develop an application for telephone directory using data base(msaccess).
6. To implement student mark list using AWT classes with data base (msaccess).
7. To develop a program for prime number using RMI.
8. To develop a program for Arithmetic Operation using Servlets.
9. To develop an application for simple EB Bill using Servlets with database.

III B.C.A.	RELATIONAL DATABASE MANAGEMENT SYSTEMS	CA509S
SEMESTER - V		HRS/WK-5
MAIN		CREDIT - 4

Objective :

To make the students aware of Normalization concepts related to Database and Some Basic SQL Commands.

UNIT - I

[18 hrs]

Database management system: Definition – purpose of database systems – data abstraction – data models – instances and schemes – data independence – database manager – database administrator – database users – overall system structure.

UNIT II

[18 hrs]

Entity – Relationship Model: Entities and entity sets – relationships and relationship sets – attributes – mapping constraints – keys –E-R diagram – reducing E-R diagrams to tables – generalization – aggregation.

UNIT - III

[18 hrs]

Normal Forms: First Normal Form – Second Normal Form – Third Normal Form – Boyce – Codd normal form - Fourth Normal Form.

UNIT - IV

[18 hrs]

Introduction to SQL:DDL,DML,DCL operations – integrity constraints – string functions – number functions – date functions-aggregate functions – selecting distinct values – working with null values –pseudo columns – grouping and ordering data – sub queries – joins – union ,intersect & minus – indexes – clusters – views-snapshots – sequences – synonym – users, roles and privileges – grant and revoke permission – locks.

UNIT - V

[18 hrs]

Introduction to PL/SQL: PL/SQL overview-Declarations section-Executable commands section-Exception handling section-Procedures-Functions-Packages-Triggers-Cursor Management.

TEXT BOOKS:

1. Henry F.Korth& Abraham Silberschatz “Database System concepts”- TMH-1998.
2. A.J.Page “Relational database concepts selection and implementation”
3. ORACLE DATABASE 10g-The complete reference- **KEVIN LONELY**, Tata McGraw-Hill Publishing Company Ltd 2004

REFERENCE BOOKS:

1. "Introduction to Oracle", Oracle Corporation Press.
2. "Introduction to PL/SQL", Oracle Corporation Press.

III B.C.A.	PROGRAMMING USING MICROSOFT TECH. (ASP.NET USING C#)	CA510T
SEMESTER - V		HRS/WK-5
MAIN		CREDIT - 4

Objective:

To make the student get exposed with the latest programming concept Dot net and to equip them with skills related to c# programming.

UNIT-I

[15 hrs]

Introductin to Dot Net:- Dot Net Framework –CLR-MSIL-JIT-Managed Code-Benefits of Dot Net.

UNIT -II:

[15 hrs]

C#.Net: Data types-Variables-Arrays-Properties-Namespace-Methods-Interface-Delegation.

UNIT-III:

[15 hrs]

Asp.net: Difference between Asp and Asp.net-Architecture of Asp.net-Execution model-Difference between Code Behind and aspx file-Implementation of simple web application.

UNIT-IV:

[15 hrs]

Controls in C#: Button-Textbox-Timer-PictureBox-RadioButton-Menu. **Web Controls:** AdRotator-Validation-Calendar .

UNIT -V:

[15 hrs]

ADO.NET: ADO.Net Objects Model – Architecture of ADO.NET-Working with Grid control-Working with Crystal Report Viewer control.

TEXT BOOKS:

1. Harvey M.Deitel& Paul J.Deitel- c# Programmers- Second Edition-Pearson Edition.
2. YashavantKanetkar, 2004 C#.Net. Motilal Books of India.
3. Peter Drayton , Ben Albahari, Ted Neward. C# in an nutshell. O’Reilley Publication.
4. E.Balaguruswamy. Programming with C# - 1- Edition. Tata McGraw – Hill Publication.

REFERENCE BOOKS

1. Herbert Schlitz. 2002 C# - A Beginner’s Guide. Osborne/ McGraw – Hill Publication.
2. Burton Harvey, Simon Robinson, julianTempleman and KarliWaston, ‘C# Programming with the Public Bata’, Shroff Publishers & Distributors Pvt. Ltd(SPD) Mumbai, April 2001.
3. Ben Albahart, Peter Drayton and Brad Merrill, ‘c# Essentials’, SPD, Mumbai March 2001.
4. ThamariSelvei, A text Book on C#: A Systematic Approach to OOP, Pearson Ed.

III B.C.A.	DATA COMMUNICATION NETWORKS	ECA511
SEMESTER - V		HRS/WK-5
ELECTIVE-II		CREDIT - 5

Objective:

To enable the students to get acquainted with the basics of Networks and to make them concentrate on research side with respect to networks.

UNIT I **[18 hrs]**

Introduction: Networks – protocols and standard – line configuration – topology – transmission mode – categories of networks – inter networks.

UNIT II **[18 hrs]**

OSI model: functions of the layers – TCP/IP protocol suite – signals – analog and digital signal – periodic and a periodic signals – analog signals – digital signal – data transmission – data terminal equipment – data circuit terminals equipment – modems.

UNIT III **[18 hrs]**

Transmission 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 **[18 hrs]**

Switching Techniques: circuit switching – packet switching – message switching – networking and internetworking devices – repeaters – bridges – routers – gateways.

UNIT V **[18 hrs]**

Routing algorithms: distance vector routing – link state routing – data link control – line discipline – flow control – error control.

TEXT BOOKS:

1. Behrouz A Forouzan, “Data Communications and Networks” – Second Edition, Tata McGraw Hill, 2002.
2. Andrew S. Tanenbaum, “ Computer Networks”, 3rd Edition,

REFERENCE BOOK:

1. William Stallings, “Data & Computer Communications”, Sixth Edition, Pearson Education, 2001.
2. Fred Halsall, “Data Communications, Computer Networks and Open Systems”, Addison Wessley, 1995.

III BCA	MULTIMEDIA AND VIRTUAL REALITY	ECA512S
SEMESTER – V		HRS/WK – 5
ELECTIVE-I		CREDIT – 5

Objective:

To enable the students to learn the basic functions, principles and concepts of Multimedia and Virtual Reality

UNIT-I **[12 Hrs]**

Introduction: What is Multimedia: Definitions – Where to use multimedia – Introduction to Making Multimedia: What you need – Macintosh and Windows production platforms

Text: The power of meaning – About fonts and faces – Using text in multimedia – Computers and Text – Font editing and Design tools – Hypermedia and Hypertext

UNIT-II **[12 Hrs]**

Sound: The power of sound – Multimedia system sounds – MIDI versus Digital Audio – Digital Audio – Making MIDI audio – Audio, File formats – Working with sound on the Macintosh – Notation Interchange File Format (NIFF) – Adding sound to your multimedia project – Toward Professional sound: The Red Book standard – Production tips.

Images: Making still Images – Color – Image file formats. Animation: The Power of Motion – Principles of Animation – Making animations that works.

UNIT-III **[12 Hrs]**

Video: Using Video – How Video works – Broadcast video standards – Integrating computers and television – Shooting and Editing Video – Video tips – Recording formats – Digital Video. Planning and Costing: Project planning – Estimating – RFPs and Bid Proposals – Designing and producing: Designing – Producing

UNIT-IV **[12 Hrs]**

Introduction to virtual reality –goals of virtual reality, the human side of things, and the basic concepts of virtual reality, Evaluation of virtual reality: Improvement of communication with computers. Early vision of virtual reality. State of virtual reality: sense of sound, touch, other senses, world creating tools. Virtual reality issues: display issues, tracking issues, manipulation issues, application issues, and navigation issues.

UNIT-V **[12 Hrs]**

Application to virtual reality: 3D modeling, 3D architecture, 3D training, 3D science, 3D education, 3D shopping, 3D sports, Distributed interactive simulation, the responsive work bench, VR training programme for disable children, medicine and surgery. Introduction to Virtual Reality Modeling languages.

Text Books :

1. Multimedia Making it Work – Tay Vaughan
2. John Hayward – Adventures in Virtual Reality, One publications

Reference Book :

John F.Koegel Buford, Multimedia systems.

III BCA	COMPUTER GRAPHICS	ECA512A
SEMESTER- V		HRS/WK-5
ELECTIVE I		CREDIT -5

Objective:

- To enable the students to learn about the working of input/output devices.
- To make the student to learn the concepts of 2D and 3D Object transformation models and generation algorithms.

UNIT - I

[15 Hrs]

Introduction to computer Graphics: Video display devices – Raster scan system – Random Scan System – Interactive input Devices – Hard copy devices – Graphics software – Output primitives – line drawing algorithms – initializing lines – Line function – circle Generating algorithms.

UNIT - II

[15 Hrs]

Output Primitives: Attributes of output Primitives – line attributes – Color and Grayscale style – Area filling algorithms – Character attributes Inquiry functions – Two dimensional transformations – Basic transformation – composite transformation – Matrix representation –Other transformations.

UNIT - III

[15 Hrs]

2D Concepts: Two – dimensional viewing – window – to view port co-ordinate transformation – clipping algorithms – interactive input methods – Physical Input devices – logical classification of input devices – interactive picture construction methods.

UNIT- IV

[15 Hrs]

3D Concepts: Three – dimensional concepts – Three dimensional display methods – parallel Projection –Perspective projection – Depth Cueing – Visible line and surface identification.

UNIT - V

[15 Hrs]

Transformations: Three dimensional transformations -Three dimensional viewing – Projection – Viewing transformation – implementation of viewing operations.

TEXT BOOK:

1. D. Hearn and M.P. Basker – Computer Graphics [C Version] – Person Education.

REFERENCE BOOK:

1. W.M. Newman and RF. Sproull – Principle of Interactive Computer Graphics – McGraw Hill International Edition -1979.

III B.C.A.	RDBMS -ORACLE-PRACTICAL	CAP505T
SEMESTER - V		HRS/WK-5
PRACTICAL		CREDIT - 3

Objective:

To make the student aware of the Back-End tool.

SQL

1. Simple Queries using DDL,DML and DCL
2. SQL In-Built Functions
3. SET Operations
4. Views and Snapshots
5. Joins
6. Sub Queries

PL/SQL

7. PL/SQL Block
8. Procedures
9. Functions
10. Packages
11. Triggers
12. Cursors

III BCA	PROGRAMMING USING MS TECH. (ASP.NET USING C#) PRACTICAL	CAP506T
SEMESTER - V		HRS/WK-5
PRACTICAL		CREDIT - 3

Objective:

To improve the programming skills of the students with respect to C# and also to develop web application using asp.net and to make the students to know the latest programming concepts.

WINDOWS APPLICATION:

1. To develop simple student bio data
2. Create a color chooser using standard control.
4. To develop Notepad Application.
5. Login Form Creation using Ms Access.

WEB APPLICATION:

6. Create an application to sending a request from one page to another using session.
7. Create a simple website for an organization using Master Page.
8. To develop database application for student mark list processing using validation control (Oracle)
9. To develop database Application for Telephone Directory to store phone number, Customer name and Customer address and display it with Grid View control.(SQL server)

III BCA	OPEN-SOURCE TECHNOLOGIES-PHP	CA614Q
SEMESTER - VI		HRS/WK- 5
MAIN		CREDIT - 4

Objective:

To impart basic knowledge of PHP and MySQL.

UNIT-I [15 Hrs]
BASICS OF PHP:-History of php-Language basics:-Lexical structure-Data types-variables-Expressions and operators-flow control statements:if,if-else,while,do-while,switch,for,foreach-Functions:defining functions-variable scope(global and local variables)-function parameters: call by reference-call by value-return values: return single value, multiple value-handling missing parameters-default parameters.

UNIT-II [15 Hrs]
STRING: String constants-printing string functions: print, print_r, printf, echo, var_dump-string manipulation functions: trim, ltrim, rtrim, strtolower, strtoupper, ucfirst, ucwords, strpos, substr,chartocode, strlen, strrev,str_word_count, strcmp, strcasecmp
ARRAY: Indexed – Associative-multidimensional arrays-Array Sorting: sort, asort, ksort, rsort, arsort, krsort, usort, uasort, uksort, ord functions.
OOPS IN PHP: Class, Object, Inheritance, Creating a class-creating object-accessing properties and methods-this variable –inheritance-use of extend keyword-constructor.

UNIT-III [15 Hrs]
BUILT IN FUNCTIONS IN PHP:
Mathematical functions: floor, fmod, pow, round, rand, sqrt, max, min, log, hexdec.
Date and Time Functions: data, data_default_timezone_set, strtotime, mktime.
Handling Files: create- fopen - fread - fwrite – include – fclose – unlink – fgets – fgetc – feof - require-require_once.

UNIT-IV [15 Hrs]
Handling Web Pages:
HTML – HTML tags-tables-frames-images-textfiled-textarea-listbox-checkbox-select-radiobutton-button-fileupload button-file download.
Javascript –Javascript basics –validating forms.
Handling Session and Cookies: Global variables:-\$_Globals, \$_Server, \$_request, \$_Post, \$_files, \$_Cookies, \$_Session.

UNIT-V [15 Hrs]
Working with Databases: Creating a MYSQL database-Creating a new Table-Inserting data into the database-Updating databases-Deleting records- Accessing the database records from PHP.

TEXT BOOK

1. Steven Holzner, "The Complete Reference PHP", Tata McGraw Hill Pvt.Ltd., 2008.

BOOK FOR REFERENCE

1. Leon Atkinson, "Core PHP programming", Pearson Education, 2004.

III BCA	COMPUTER ARCHITECTURE	ECA613T
SEMESTER - VI		HRS/WK-5
ELECTIVE-IV		CREDIT - 5

Objective:

To enable the students to learn the principles of Computer Working and its entire Internal Hardware..

UNIT- I

[15 Hrs]

Central processing unit : General register and stack organization - Instruction formats - Addressing modes – Data Transfer and Manipulation.

UNIT- II

[15 Hrs]

Pipelining : Arithmetic, instruction and RISC pipelining .

UNIT- III

[15 Hrs]

Computer Arithmetic: Addition and subtraction - Multiplication and Division Algorithms - Floating point addition and subtraction.

UNIT - IV

[15 Hrs]

Input-Output organization: Peripheral Devices - I/O Interface - Asynchronous data transfer - Priority interrupt - Direct memory access.

UNIT- V

[15 Hrs]

Memory Organization: Memory hierarchy - Main memory - Auxiliary memory - Associative, Cache and Virtual memory.

Text Book:

M.Morrismano, “computer system architecture”, PHI.

Reference Book:

1.V.Carl Hamacher, Uonko G.Vranesic, safwat G.Zaky, “Computer Organization”, McGraw Hill

2.John, P.Hayes, “Computer system Architecture”, McGraw Hill.

III BCA	OPERATING SYSTEMS	CA615S
SEMESTER - VI		HRS/WK-5
MAIN		CREDIT - 4

Objective:

This paper is intended to make the student aware of all concepts related to operating system.

UNIT-I [18 hrs]

Introduction: History of Operating system - Operating system functions – File system.

UNIT-II [18 hrs]

Process Management: Inter-process communication - Dead Lock - Dead Lock prerequisites - Dead Lock Strategies

UNIT-III [18 hrs]

Memory Management: - Single Contiguous – Fixed Partitioned – Variable Partitions – Non-Contiguous allocations - Paging – Segmentation - Virtual Memory Management Systems.

UNIT-IV [18 hrs]

GUI: – Components of GUI – Requirements of Windows based GUI –Security Protection: Threats – Attacks – Worms – Virus - Design principles – Authentication – Protection mechanisms – Encryption.

UNIT-V [18 hrs]

Unix OS: Overview of Unix-Unix File System: Users View of File System-Types of Files-Internals of File System: Logical Layout of the File-The Super Block-Structure of inode-Address Translation-run-Time Data Structure for File system: UFDT-File Table-Inode Table-System Calls: Open-Read-Write-Random Seek-Close-Create a File-Unlink a File-Change Directory. Basic Commands in Unix.

TEXT BOOKS:

1. A.S.Godbole-Operating Systems-TMH-1999.
2. A.Silberschatz and P.B.Galvin- Operating system concepts-Addison-Wesley Publishing company, Fifth Edition, 1998.

REFERENCE BOOKS :

1. Andrew S.Tannenbaum, “Operating Systems: Design and Implementation”, 3/e, PHI,2006.
2. Charles Crowley, ”Operating Systems-A design Oriented Approach”, Tata McGraw Hill , 1998.
3. William Stallings, “Operating Systems”,5/e PHI/Pearson Education , 1997.

III BCA	SOFTWARE ENGINEERING	ECA616T
SEMESTER - VI		HRS/WK-5
ELECTIVE-III		CREDIT - 5

Objective:

To introduce the concepts of software Engineering and the various phases in Software development in order to equip the students in developing project.

UNIT - I: [18 hrs]

Introduction: Evolving Role of Software-Characteristics of Software-Software Myths-Process Models: Waterfall Model- Evolutionary Process Models.

UNIT -II : [18 hrs]

Requirement Engineering: Tasks - Initiating the Requirements Engineering Process- Eliciting Requirements.

UNIT III: [18 hrs]

Building Analysis Model: Requirement Analysis - Data Modeling – Flow Oriented Modeling – Class Based Modeling – Creating a Behavioral Model.

UNIT -IV: [18 hrs]

Testing:Software Testing Methods - Software Testing strategies –White Box Testing – Basic Path- Control Structure – Black Box Testing.

UNIT -V: [18 hrs]

Project Management: Management Spectrum - Formal Technical Reviews – Software Change Management Process – Clean Room S/W Engineering Specification-Design and Testing.

TEXT BOOKS :

- 1 R.S.Pressman – Software Engineering –Sixth Edition McGraw Hill International edition – 1997.
2. Richard Fairley – Software Engineering – (Design, Reliability and Management) – Tata McGraw Hill edition –1983.

REFERENCE BOOKS

1. Software Engineering Programs Documentation Operating procedures
2. Carlo Ghezzi, Mehdi Jazayasi, Dino Mandrioloi,” Fundamentals of Software Engineering “ Phi Pvt. Ltd., 1991.

III BCA	PROGRAMMING IN PHP	CAP607Q
SEMESTER - VI		CREDIT - 3
PRACTICAL		HRS/WK- 5

Objective:

To enable the student to build software applications in PHP.

1. Simple Programs (Factorial , prime number, Fibonacci series)
2. String Functions:
(trim,ltrim,rtrim,strtolower,strtoupper,ucfirst,ucwords,strops,substr,chartocode, strlen,strrev,str_word_count,strcmp,strcasecmp)
3. Arrays
4. Functions-Math function:-floor,pow,round,rand,sqrt,max,min,hexdec.
Date and Time functions:-strtotime,mktime,data_default_timezone_set.
5. Create a Home Page using PHP and validating the form using javascript.
6. Form creation using POST method
7. Database Operations
8. Login form
9. Student mark list creation
10. Electricity bill preparation.

III BCA	MINI PROJECT	JCA601
SEMESTER - VI		HRS/WK-5
MINI PROJECT		CREDIT - 3

Objective:

The main objective of this Mini project is to expose the students to industry atmosphere and to get a broad idea to develop project.

Mini-Project on Multimedia/ Web design/IPhone Applications.

FORMAT FOR PREPARING MINI PROJECT REPORT

Arrangement of contents

1. Title Page
2. Bonafide Certificate
3. Acknowledgement
4. Table of contents
5. Abstract
6. Chapters of the Report
7. References
8. Appendices, if any

Appendices should be named as

APPENDIX – A

APPENDIX - B

BINDING SPECIFICATION

Report should be bound using flexible cover of thick white art paper.

The Spine for the bound volume should be 2cms width.

The Cover should be printed in block letters.

MARGIN SPECIFICATION

Top : 4 cms

Bottom : 3 cms

Left : 4.5 cms

Top : 2.5 cms

PAGE NUMBERING

All Page numbers should be typed without punctuation on the bottom-center portion of the page. The Preliminary pages (table of contents and abstract) should be numbered in lowercase roman numerals. Pages of main text, starting with chapter-1, should be consecutively numbered using Arabic numerals.

TITLE PAGE

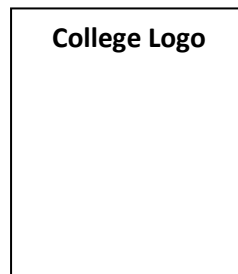
TITLE OF THE PROJECT

A project report
submitted for the partial fulfillment for
the award of degree of

BACHELOR OF COMPUTER APPLICATIONS

By
STUDENT'S NAME
(Register Number)
Under the Guidance of

GUIDE'S NAME



**PG AND RESEARCH DEPARTMENT OF COMPUTER APPLICATIONS
ST. JOSEPH'S COLLEGE OF ARTS & SCIENCE (AUTONOMOUS)
CUDDALORE - 607001.**

Month and year

CERTIFICATE

CERTIFICATE

This is to certify that the mini project report entitled

TITLE OF THE PROJECT

being submitted to the
St. Joseph's College of Arts and Science (Autonomous),
Affiliated to Thiruvalluvar University, Vellore.

by

Mr./Ms. STUDENT'S NAME (Reg. No.)
for the partial fulfillment for the award of degree of

BACHELOR OF COMPUTER APPLICATIONS

is a bonafide record of work carried out by him/her, under
my guidance and supervision.

Head of the Department

Internal Guide

Submitted for the viva-voce examination on-----

Examiners:

- 1.
- 2.

Question Paper pattern:

THEORY EXAMINATION (B.C.A.)

Continuous Internal Assessment (CIA) - 25 Marks

Two Internal Examinations	15 marks
Assignment / Seminar	5 marks
Attendance	5 marks
Total	25 marks

External Examination (SE) - 75 Marks

Question Pattern B.C.A.

Time: 3 Hrs

Max. Marks: 75

Section - A (5 x 5 = 25)

Answer ANY FIVE out of EIGHT

One question from each unit and three questions from important topics with problems and programs

Section - B (5 x 10 = 50)

Answer ANY FIVE out of EIGHT

One question from each unit and three questions from important topics with problems and programs