



SCHEME OF STUDIES & EXAMINATIONS

Department: Bachelor of Computer Applications – 4th Semester

Sr. No	Course No.	Course Title	Teaching Schedule			Marks of class work	Examination Marks		Total	Credit	Exam Duration
			L	T	P		Theory	practical			
1	BCA-202 B	Operating System	3	1	-	25	75	-	100	4	3
2	BCA-204 B	Relational Database Management System	3	1	-	25	75	-	100	4	3
3	BCA-206 B	Introduction to Internet & Web Designing	3	1	-	25	75	-	100	4	3
4	BCA-208 B	Basic Accounting	3	1	-	25	75	-	100	4	3
5	BCA-210 B	Object Oriented Programming	3	1	-	25	75	-	100	4	3
6	BCA-224 B	SOFTWARE LAB.-VI(Oracle/MySQL) (BASED ON BCA-204)	-	-	2	20	-	30	50	1	3
7	BCA-226 B	SOFTWARE LAB.-VII(HTML/DHTML) (BASED ON BCA-206)	-	-	2	20	-	30	50	1	3
8	BCA-230B	SOFTWARE LAB.-VIII (BASED ON BCA-210)	-	-	2	20	75*	30	50	1	3
Total			15	5	6	185	375	90	650	23	



SYLLABUS: BCA

Department: Bachelor of Computer Applications – 4th Semester

Subject: Operating System (Theory)

Subject Code: BCA-202B

Detailed Content

Unit No.1 Fundamentals of Operating System

Topic No.1 : Introduction to Operating System

Topic No.2 : Its need and Operating System services

Topic No.3 : Early systems

Topic No.4 : Structure: Simple, Batch, Multi programmed, Timeshared, Personal Computer, Parallel, Distributed systems, Real-Time systems

Unit No.2 Process Management

Topic No.5 : Process concepts

Topic No.6 : Process states and Process Control block

Topic No.7 : CPU Scheduling: Scheduling criteria, Levels of Scheduling, Scheduling Algorithms, Multiple processor scheduling

Topic No.8 : Deadlock characterization

Topic No.9 : Methods of handling deadlocks

Unit No.3 Concurrent Processes

Topic No.10: Critical section problem

Topic No.11: Semaphores

Topic No.12: Classical process co-ordination problems & their solutions

Topic No.13: Inter-process Communications

Topic No.14: Memory management of single-user & multi-user OS

Topic No.15: Partitioning

Topic No.16: Swapping

Topic No.17: Paging & Segmentation

Topic No.18: Virtual memory

Topic No.19: Page replacement Algorithms

Unit No.4 File Management

Topic No.20: File concept

Topic No.21: Access methods

Topic No.22: Directory structure

Topic No.23: File protection

Topic No.24: Allocation methods: Contiguous, Linked & Index allocation

Topic No.25: Disk structure

Topic No.26: Disk scheduling: FCFS, SSTF, SCAN, C-SCAN, LOOK, C-LOOK

Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
3	1	-	4	25	75	3 hours	100

TEXT/REFERENCE BOOKS:

1. Silberschatz A., Galvin P.B., and Gagne G., "Operating System Concepts", John Wiley & Sons.
2. William Stallings, "Operating Systems, Internals and Design Principles".

NOTE:

Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all taking at least one question from each unit.



SYLLABUS: BCA

Department: Bachelor of Computer Applications – 4th Semester

Subject: Relational Database Management System (Theory)

Subject Code: BCA-204B

Detailed Content

Unit No.1 Relational Model

Topic No.1 : Relational Model concepts

Topic No.2 : Codd's rules for Relational Model

Topic No.3 : Relational Algebra: Selection & Projection, Set operation, Renaming, Join & Division

Topic No.4 : Relational Calculus: Tuple Relational Calculus, Domain Relational Calculus

Unit No.2 Functional Dependencies & Normalization

Topic No.5 : Purpose

Topic No.6 : Data Redundancy & update Anomalies

Topic No.7 : Functional Dependencies: Full Functional dependencies, Transitive Functional Dependencies

Topic No.8 : Characteristics of Functional Dependencies

Topic No.9 : Decomposition

Topic No.10: Normal Forms (1NF, 2NF, 3NF & BCNF)

Unit No.3 SQL

Topic No.11: Data Definition & data types

Topic No.12: Specifying Constraints in SQL

Topic No.13: Schema

Topic No.14: Change statement

Topic No.15: Basic Queries in SQL

Topic No.16: Insert

Topic No.17: Delete & Update statements

Topic No.18: Views

Unit No.4 PL/Sql

Topic No.19: Introduction

Topic No.20: Advantages of PL/SQL

Topic No.21: The Generic PL/SQL Block: PL/SQL Execution Environment, PL/SQL Character set & Data Types, Control Structure in PL/SQL

Topic No.22: Cursors

Topic No.23: Triggers

Study Scheme				Evaluation Scheme			Total Marks
L	T	P	Credits	Internal Assessment	External Assessment (Examination)		
				Max. Marks	Max. Marks	Exam Duration	
3	1	-	4	25	75	3 hours	100

TEXT/REFERENCE BOOKS:

1. Elmasri & Navathe, "Fundamentals of Database Systems", 5th edition, Pearson Education.
2. Ivan Bayross, "SQL, PL/SQL-The Programming Language of ORACLE", BPB Publications 3rd edition.
3. C. J. Date, "An Introduction to Database Systems", 8th edition, Addison Wesley N. Delhi.

NOTE: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all taking at least one question from each unit



SYLLABUS: BCA

Department: Bachelor of Computer Applications – 4th Semester

Subject: Introduction To Internet And Web Designing (Theory)

Subject Code: BCA-206B

Detailed Content

Unit No.1 Internet Basics

- Topic No.1 : Introduction to Internet, Internet Services
- Topic No.2 : WWW and working of Internet
- Topic No.3 : Internet Connection Concepts and introduction to internet
- Topic No.4 : DNS Working and configuring internet connection
- Topic No.5 : Connecting LAN to Internet
- Topic No.6 : Single user , Multiuser , Server , Workstation
- Topic No.7 : Client Server Environment
- Topic No.8 : Computer Networks and types Of Computer Network: LAN,WAN,MAN
- Topic No.9 : Network Topologies

Unit No. 2 Web Browsers

- Topic No.10: Web Browsers
- Topic No.11: Search Engines and Categories of Search Engines
- Topic No.12: Searching Criterion, Surfing the net
- Topic No.13: Hyper Text Transfer Protocol (HTTP), URL
- Topic No.14: Other Internet Tools
- Topic No.15: Online Chatting, Messaging and Conference Concepts
- Topic No.16: E-Mail , Mailing Lists,
- Topic No.17: Usenet Newsgroup Concepts- Reading use net newsgroups
- Topic No.18: Internet Relay Chat, Instant Messaging, Video Conferencing

Unit No. 3 World Wide Web

- Topic No.19: WWW concepts
- Topic No.20: Web page: Static, Dynamic, Active
- Topic No.21: Scripting Language: Server Side, Client Side.
- Topic No.22: Web Site Development Phases
- Topic No.23: Web Designing, Development and Publishing
- Topic No.24: HTTP, URL Registration, Browsers, Search Engine, Web Servers, Proxy Servers.

Unit No. 4 HTML

- Topic No.25: HTML Concepts
- Topic No.26: Structure of HTML documents, HTML Elements, attributes, Language Attributes, Core Events, Block Level Events, Text Level Events
- Topic No.27: Linking Basics, Linking in HTML, Images and Anchor
- Topic No.28: Anchor Attributes, Image Maps, Semantic Linking Meta Information
- Topic No.29: Image Preliminaries, Image Download Issues, Images as Buttons
- Topic No.30: Introduction to Layout: Backgrounds, Color and Text Fonts, Layout with Tables
- Topic No.31: Advanced Layout: Frames and Layers, Style sheets, Positioning With Style Sheets
- Topic No.32: Forms, Forms Control, New and Emerging Form Elements

Study Scheme				Evaluation Scheme			Total Marks
L	T	P	Credits	Internal Assessment Max. Marks	External Assessment (Examination) Max. Marks	Exam Duration	
3	1	-	4	25	75	3 hours	



PM
COLLEGE OF ENGINEERING

A Unit of Puran Murti Educational Society
Approved by AICTE, Ministry of HRD, Govt. of India,
Affiliated to Deenbandhu Chhotu Ram University of Science & Technology

TEXT/REFERENCE BOOKS:

1. World Wide Web Design with HTML, Xavier, TMH
2. The complete reference – HTML, TMH

NOTE:

Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all taking at least one question from each unit.





SYLLABUS: BCA

Department: Bachelor of Computer Applications – 4th Semester

Subject: Basic Accounting (Theory)

Subject Code: BCA-208B

Detailed Content

Unit No.1 Basic Accounting Concepts

- Topic No.1 : Background of Accounting
- Topic No.2 : Introduction
- Topic No.3 : Importance and Scope
- Topic No.4 : Accounts types and Classification
- Topic No.5 : Basic Term: Capital, Income, Expenditure, Expenses, Assets, Liabilities & application to problems
- Topic No.6 : Accounting equation
- Topic No.7 : Double entry system
- Topic No.8 : Generally accepted accounting principles

Unit No.2 Journal & Ledger

- Topic No.9 : Journal & recording of entries in general with narration
- Topic No.10: Ledger posting from general to respective ledger accounts
- Topic No.11: Basic concepts: Purchase book, Sales book, Cash book
- Topic No.12: Trail balance: Needs and objectives, Application of trial balance, Different types of error escaped, Trial balance preparation

Unit No.3 Final Accounts

- Topic No.13: Final accounts without adjustments
- Topic No.14: Bank reconciliation statements
- Topic No.15: Bank transaction
- Topic No.16: Preparation of simple Bank reconciliation statement

Unit No.4 Capital

- Topic No.17: Sources of raising of capital in corporate undertaking: Working capital, Long-Term capital
- Topic No.18: Application of Computers in Accounting

Study Scheme				Evaluation Scheme			Total Marks
L	T	P	Credits	Internal Assessment Max. Marks	External Assessment (Examination) Max. Marks	Exam Duration	
3	1	-	4	25	75	3 hours	100

TEXT/REFERENCE BOOKS:

1. Managerial Accounting, Jawahar Lal, First Edition
2. Financial Accounting, Dr. R.K. Mittal & M.R. Bansal
3. Basic Accounting, Rajni Sofat & Preeti Hiro, Second Edition
4. Accounting for management, Bhattacharya & Deaden, Paperback Edition, Vikas 1986
5. Financial Accounting (Part I and Part II), R.L Gupta & V.K Gupta
6. Fundamental Accountancy, S.N. Maheshwari
7. Accounting Principal, Antony & Reece, Sixth Edition.

NOTE:

Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all taking at least one question from each unit.



SYLLABUS: BCA

Department: Bachelor of Computer Applications – 4th Semester

Subject: Object Oriented Programming (Theory)

Subject Code: BCA-210B

Detailed Content

Unit No.1 Object-Oriented Programming Concepts

- Topic No.1 : Procedural language & Object Oriented approach
- Topic No.2 : Characteristics of OOP
- Topic No.3 : Polymorphism
- Topic No.4 : Encapsulation
- Topic No.5 : User-defined types
- Topic No.6 : Syntax of C++
- Topic No.7 : Data types
- Topic No.8 : Variables
- Topic No.9 : Strings
- Topic No.10: Function
- Topic No.11: Operators
- Topic No.12: Recursion
- Topic No.13: Array
- Topic No.14: Pointer
- Topic No.15: structure

Unit No.2 Abstracting Mechanism

- Topic No.16: Classes
- Topic No.17: Private & Public
- Topic No.18: Constructor & Destructor
- Topic No.19: Member function
- Topic No.20: Static members
- Topic No.21: New
- Topic No.22: Delete
- Topic No.23: Copy Constructor
- Topic No.24: Assignment Operator

Unit No.3 Inheritance & Polymorphism

- Topic No.25: Derived Class & Base Class
- Topic No.26: Different types of Inheritance
- Topic No.27: Overriding member function
- Topic No.28: Abstract Class
- Topic No.29: Public & Private Inheritance
- Topic No.30: Ambiguity in Multiple Inheritance
- Topic No.31: Virtual memory
- Topic No.32: Friend function
- Topic No.33: Static function
- Topic No.34: Operator Overloading
- Topic No.35: Function overloading

Unit No.4 Exception Handling

- Topic No.36: Exception & derived class
- Topic No.37: Function exception declaration
- Topic No.38: unexpected exception





Topic No.39: Exception when handling exception

Topic No.40: Template

Topic No.41: Standard Template Library: Template classes,Declaration,Template functions

Topic No.42: Text versus Binary files

Topic No.43: Opening & Closing files

Topic No.44: File pointers

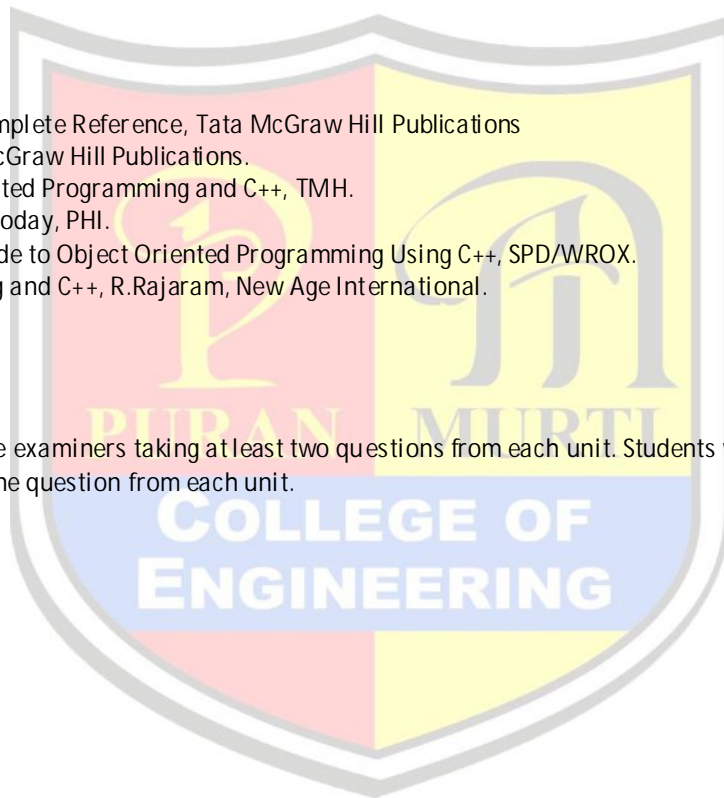
Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
3	1	-	4	25	75	3 hours	

TEXT/REFERENCE BOOKS:

1. Herbert Schildt: C++ - The Complete Reference, Tata McGraw Hill Publications
2. BalaguruSwamy: C++, Tata McGraw Hill Publications.
3. Balaguruswamy: Object Oriented Programming and C++, TMH.
4. Johnston: C++ Programming Today, PHI.
5. Olshevsky: Revolutionary Guide to Object Oriented Programming Using C++, SPD/WROX.
6. Object Oriented Programming and C++, R.Rajaram, New Age International.

NOTE:

Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all taking at least one question from each unit.





SYLLABUS: BCA

Department: Bachelor of Computer Applications – 4th Semester

Subject: Introduction to Internet & Web Designing LAB

Subject Code: BCA-226B

Detailed Content

List of Programs:

1. How World Wide Web is used
2. How we can use Basic Tags of HTML
3. How we can use additional tags of HTML
4. Write a program to create table in HTML
5. Write a program to create Lists in HTML
6. Write a program to create background Image and color in HTML
7. Write a program to use Linking tags in HTML
8. Write a program to use an image in our web page
9. How we can create our own website
10. Write a program to use HTML forms
11. Write a program to use frames in HTML
12. Write a program to use background, colors, text, font
13. Write a program to use Style sheets
14. Write a program to use new & emerging form elements

Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
		2	1	20	30	3 hours	50

NOTE:

Students are required to attempt at least 10 exercises based on the syllabi of subject BCA-206. The exercises should be relating with the experiments on HTML/DHTML



SYLLABUS: BCA

Department: Bachelor of Computer Applications – 4th Semester

Subject: Object-Oriented Programming LAB

Subject Code: BCA-230B

Detailed Content

List of Programs:

1. How to use the concept of OOP
2. How to use the conditional statements in OOP
3. How to use Iterative statements in OOP
4. Write a program to print hello screen in OOP
5. Write a program to use the concepts of Function, Operator overloading & function overriding
6. Write a program to use the concept of virtual, friend & static function
7. Write a program to use the concept of storage classes in OOP
8. Write a program to print Fibonacci series
9. Write a program to use the concept of Exception handling
10. Write a program to use the concept of files in OOP
11. Write a program to open & close a file
12. Write a program to use File pointers
13. Write a program to use standard template library
14. Write a program to use the concept of Inheritance
15. Write a program to use Access specifiers in OOP

Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
		2	1	20	30	3 hours	50

NOTE:

Students are required to attempt at least 10 exercises based on the syllabi of subject BCA-210. The exercises should be relating with the experiments on C++.