

FACULTY OF COMPUTER SCIENCE & IT

SYLLABUS

of

Bachelor of Arts / Bachelor of Science

COMPUTER APPLICATION (VOCATIONAL)

(Semester I - IV)

(Under Continuous Evaluation System)

(12+3 System of Education)

Session: 2019-20



The Heritage Institution

**KANYA MAHA VIDYALAYA
JALANDHAR
(Autonomous)**

Scheme of Studies and Examination
Bachelor of Arts / Bachelor of Science
COMPUTER APPLICATION (VOCATIONAL)
Session 2019-20

Semester - I								
Course Name	Program Name	Course Code	Course Type	Marks				Examination time (in Hours)
				Total	Ext.		CA	
					L	P		
Computer Applications (Vocational) (Computer Fundamental & PC Software)	B.A Sem- I	BARM-1124	E	100	50	30	20	3+3
	B.Sc(Eco.)- Sem I	BECEM-1124	E					

Semester - II								
Course Name	Program Name	Course Code	Course Type	Marks				Examination time (in Hours)
				Total	Ext.		CA	
					L	P		
Computer Applications (Vocational) (Programming Using C)	B.A	BARM-2124	E	100	50	30	20	3+3
	B.Sc.(Eco.)- Sem II	BECEM-2124	E					

Semester III								
Course Name	Program Name	Course Code	Course Type	Marks				Examination time (in Hours)
				Total	Ext.		CA	
					L	P		
Computer Applications (Vocational) (Operating System)	B.A Sem- III	BARM-3124	E	100	50	30	20	3+3
	B.Sc. (Eco.)- Sem III	BECM-3124	E					

Semester IV								
Course Name	Program Name	Course Code	Course Type	Marks				Examination time (in Hours)
				Total	Ext.		CA	
					L	P		
Computer Applications (Vocational) (Relational Database Management Systems & Oracle)	B.A Sem- IV	BARM-4124	E	100	50	30	20	3+3
	B.Sc. (Eco.)- Sem IV	BECM-4124	E					

Bachelor of Arts / Bachelor of Science
COMPUTER APPLICATION (VOCATIONAL)

Session 2019-20

SEMESTER I

Course Code : BARM-1124

BECM-1124

COMPUTER FUNDAMENTALS & PC SOFTWARE
(THEORY)

Course Outcomes:

After passing this course the student will be able to:

CO1: gain knowledge about various generations of computers.

CO2: understand the functionalities of hardware and software parts of the computer system.

CO3: make use of computer as per the need.

CO4: use and configure essential office applications including word processing, spreadsheets etc.

Bachelor of Arts / Bachelor of Science
COMPUTER APPLICATION (VOCATIONAL)

Session 2019-20

SEMESTER I

Course Code : BARM-1124

BECM-1124

COMPUTER FUNDAMENTALS & PC SOFTWARE
(THEORY)

Time: 3+3 Hrs

Max Marks : 100
Theory : 50
Practical : 30
CA : 20

Instructions for Paper Setter -

Eight questions of equal marks are to set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section.

UNIT-I

1. Elements of a Computer System:

- 1.1 What is a Computer?
- 1.2 Evolution of Computers, their classification and limitations, Computer organization.
- 1.3 Uses of Computers in modern society (e.g. Weather forecasting, Census, Oil Exploration, Speech Recognition, Banking, Publishing, Accounting, Research, etc.)
- 1.4 Characteristics of Desktop
- 1.5 Characteristics of Portables/Laptops
- 1.6 Introduction to Hardware, Software, Operating System, Translators.

2. Input Output Devices:

- 2.1 Input Devices and Functions
 - * Keyboard and teletypewriter terminals
 - * Joystick
 - * Mouse
 - * Light Pen
 - * Magnetic Tapes and cassettes
 - * Magnetic Disks
 - * Floppy and Winchester Disks
 - * Optical Marks Reader (OMR)
 - * Optical Character Reader (OCR)

- * Magnetic Ink Character Reader (MICR)
- * Punched Cards

2.2 Output Devices and Functions:

- a) Visual Display UNIT (Monitor), Pixel & resolution, Monitors Size, Monochrome & Color, VGA & SVGA
- b) Plotters
- c) Printers
- d) CTD

3. H/W Organization of a Desktop Computer:

- 3.1 Introduction to hardware components
- 3.2 C.P.U. Control units, ALU, Registers
- 3.3 Instruction Characteristic and Instruction Cycle
- 3.4 Memory
 - a) RAM – Dynamic RAM, Static RAM
 - b) ROM–PROM, EPROM, EEPROM
 - c) Cache, Virtual, Extended and Expanded Memories
- 3.5 Secondary Memory (Storage devices)
 - a) Floppy Disk
 - b) Hard Disk
 - c) DAT
 - d) Video or Optical Disk (CD ROM)
 - e) CTD
- 3.6 Moderns and its Types

UNIT -II

4. Basics of Windows Vista:

- a) The Desktop, the Taskbar
- b) Start Menu
- c) Program, Document, Settings, Find, Help, Run, Shutdown
- d) About the My Computer Icon
- e) About the networking neighborhood Icon
- f) Recycle bin
- g) Folders–Creation and Definition
- h) New Rules for File Names
- i) Windows Explorer (Definition)
- j) Shortcut Icons with creation and definition

UNIT-III

MS–Word:

Introduction to Word, Introduction to Parts of Word Window (Title Bar, Menu Bar, Tool Bar, The Ruler, Status Area), Page Setup, Creating New Documents, Saving Documents, Opening an Existing documents, insert a second document into an open document, Editing and formatting in document, Headers and Footers, Spell Checking, Printing document, Creating a Table Using the Table Menu and table formatting, Borders and Shading, Templates and Wizards, Mail Merge Drawing Objects, Using Frames to position Objects.

UNIT-IV

MS Power Point:

Introduction to MS Power point, Power point elements, Templates, Wizards, Views, Exploring Power Point Menu, Working with Dialog Boxes, Adding Text, Adding Title, Moving Text Area, Resizing Text Boxes, Adding Art, Starting a New Slide, Starting Slide Show, Saving presentation; Printing Slides, Views (View slide sorter view, notes view, outlines view) Formatting and enhancing text formatting, Creating Graphs (Displaying slide show and adding multi-media)

Text Books:

1. MS-Office Compiled by SYBIX
2. MS-Office BPB Publications.
3. Introduction to Computer by P.K. Sinha
4. Introduction to Information Technology by Anshuman Sharma

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COMPUTER APPLICATION (VOCATIONAL)

Session 2019-20

SEMESTER I

Course Code : BARM-1124

BECM-1124

COMPUTER FUNDAMENTAL
(PRACTICAL)

Lab Based on Computer Fundamental

Bachelor of Arts / Bachelor of Science
COMPUTER APPLICATION (VOCATIONAL)

Session 2019-20
SEMESTER II

Course Code : BARM-2124

BECM-2124

COMPUTER APPLICATIONS (VOCATIONAL)

PROGRAMMING USING C
(THEORY)

Course Outcomes:

After passing this course the student will be able to:

CO1: understand fundamentals of computer, arithmetic & logic gates, assembly language, high level language, compiler, assembler, operating systems, algorithm & flow chart.

CO2: understand the application of various operators, type conversion, Standard input/output and formatted output/input.

CO3: create user defined functions to solve real time problems using conditional and iterative statements in C language.

Bachelor of Arts / Bachelor of Science
COMPUTER APPLICATION (VOCATIONAL)
Session 2019-20
SEMESTER II

Course Code : BARM-2124

BECM-2124

COMPUTER APPLICATIONS (VOCATIONAL)

PROGRAMMING USING C
(THEORY)

Time: 3+3 Hrs

Max Marks : 100
Theory : 50
Practical : 30
CA : 20

Instructions for Paper Setter -

Eight questions of equal marks are to set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section.

UNIT-I

Data Representation, Flow Charts, Problem Analysis, Decision tables, Pseudo codes and Algorithms.

Programming Using C:

Basics of C: Introduction to C, Applications and Advantages of C, Tokens, Types of Errors

Data Types: Basic & Derived Data Types, User Defined Data Types, Declaring and initializing variables.

UNIT-II

Operators and expressions: Types of operators (Unary, Binary, Ternary), Precedence and Associativity

Data I/O Functions: Types of I/O function, Formatted & Unformatted console I/O Functions

Control Statements: Jumping, Branching and Looping—Entry controlled and exit controlled, Advantages/Disadvantages of loops, difference between for, while and do-while.

UNIT-III

Arrays: Types of Arrays, Advantages/Disadvantages of arrays. Insertion, Deletion, Searching and sorting operations on array

Strings: Introduction to Strings and String functions, array of strings.

Functions: User Defined & Library Function, Function (Prototype, Declaration, Definition), Methods of passing arguments, local and global functions, Recursion.

UNIT-IV

Storage classes: Introduction to various storage classes, scope and lifetime of a variable, Storage class specifiers (auto, register, static, extern), advantages and disadvantages.

Pointers: Introduction, Advantages/Uses of pointers, Limitations of pointers, Difference between void pointer and Null pointer, Pointer arithmetic, operators not allowed on pointers, Types of Pointer, Passing Pointers to function, concept of pointer to pointer.

Structure and Union: Introduction to structure and union, pointers with structure.

References:

1. Programming in C by Schaum Outlines Series.
2. C Programming by Stephen G. Kochan.
3. Let Us C by Yashwant Kanitkar
4. Programming in ANSI C by Balaguruswamy

Bachelor of Arts / Bachelor of Science
COMPUTER APPLICATION (VOCATIONAL)
Session 2019-20
SEMESTER II

Course Code : BARM-2124

BECM-2124

LAB – I (PROGRAMMING USING C)
(PRACTICAL)

Lab based on **PROGRAMMING USING C**

Bachelor of Arts / Bachelor of Science
COMPUTER APPLICATION (VOCATIONAL) - SEMESTER-III
(Session 2019-20)

COURSE CODE: BARM-3124

BECEM - 3124

OPERATING SYSTEM (THEORY)

Course Outcomes:

After passing this course the student will be able to:

CO1: Understand the basic knowledge of operating system, its types and functions.

CO2: Have knowledge of Unix operating system and its uses.

CO3: Gain knowledge about piping, filters, batch processing, shell programming and vi editors.

Bachelor of Arts / Bachelor of Science
COMPUTER APPLICATION (VOCATIONAL) - SEMESTER-III
(Session 2019-20)

COURSE CODE: BARM-3124

BECEM - 3124

OPERATING SYSTEM (THEORY)

Time: 3+3 Hrs

Max Marks : 100

Theory : 50

Practical : 30

CA : 20

Instructions for Paper Setter -

Eight questions of equal marks are to set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section.

UNIT-I

1 What is an Operating System - Evolution of OS Machine Language, Assembly, Compiler, Interpreter.

2 Types of Operating Systems with Examples

a) Single User Systems

b) Multi User Systems : Unix, Xenix, Vax/VMS.

3 Functions of Operating System

4. CPU Management (For come First served, Shortest Job First, Round Robin Policy).

UNIT-II

1. Memory Management (Fixed Sized partition, Variable Sized Partition, Dynamic Memory Management with Reallocation Technique, Paging Demand Paging Techniques).

2. File Management.

3. I/O Device Management.

4. Command Interpreter.

5. Data Management.

6. Programme Developing Tools.

7. Time Sharing.
8. Security.
9. Communication

UNIT-III

1. Booting a System.
2. Features and Benefits of Unix.
3. Unix System (Multi-programming, time-sharing, multitasking).
4. Components of Unix (Kernel, Shell).
5. UNIX file system (Data Block, list, super block, boot block).
6. Types of Files (Ordinary, Directory and Special Files).
7. Types of users in UNIX - levels of users (0-2).

UNIT-IV

1. Login and Logout from Unix Session.
2. Types of Shells (Bourne, c-shell, r-shell).
3. Shell as a command interpreter, clear.
4. Simple Directory and File Commands Cat, is, in, chmod, mail, who, whoami, cal, pwd, date, ps, mkdir, cd, rmdir, rm, tput, clear.
5. Piping, filters, batch processing, shell programming (echo, read, case constructs)
6. Editors (vi): Commands for opening, inserting, modifying, deleting and saving files.

References:

1. "UNIX Basics", Ian Darwin TCP Informatics January, 2005.
2. "Basics of Os Unix and Shell Programming", Isrd, Tata McGraw-Hill Education, 01-Aug-2006.
3. "UNIX in a Nutshell": System V Edition: A Desktop Quick Reference for System V Release 4 and Solaris 2.0 by Daniel Gilly, The staff of O'Reilly Media, O'Reilly Media Inc.

Bachelor of Arts / Bachelor of Science
COMPUTER APPLICATION (VOCATIONAL) - SEMESTER-III
(Session 2019-20)

COURSE CODE: BARM-3124

BECM - 3124

OPERATING SYSTEM (PRACTICAL)

Practical based on UNIX

Bachelor of Arts / Bachelor of Science
COMPUTER APPLICATION (VOCATIONAL)- SEMESTER-IV
(Session 2019-20)

COURSE CODE: BARM-4124

BECEM - 4124

**RELATIONAL DATA BASE MANAGEMENT SYSTEMS & ORACLE
(THEORY)**

Course Outcomes:

After passing this course the student will be able to:

CO1: Know about 3GL and 4GL languages, CODD's rules, concept of Database models, Normalization, database languages.

CO2: Understand and use data manipulation and data control language to query, update and manage a database.

CO3: Understand the functionality of SQL plus.

CO4: Gain knowledge about PL/SQL.

Bachelor of Arts / Bachelor of Science
COMPUTER APPLICATION (VOCATIONAL) - SEMESTER-IV
(Session 2019-20)

COURSE CODE: BARM-4124

BECEM - 4124

RELATIONAL DATABASE MANAGEMENT SYSTEMS & ORACLE
(THEORY)

Time: 3+3 Hrs

Max Marks : 100

Theory : 50

Practical : 30

CA : 20

Instructions for Paper Setter -

Eight questions of equal marks are to set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section.

UNIT-I

Relational Data Base Management System & ORACLE

1 Definition of 3 GL and 4 GL languages.

2 Definition of CODD's Rules.

3 Introduction to RDBMS and Oracle-Advantages and Limitations over DBMS.

a) Normalization of Data: First, Second and Third Normal form

b) Database Models - Hierarchical, Network, Relational

c) Features of SQL Compatibility, Portability

d) Important components (Database Manager, DDL, DML, DCL, query processor. (Data Dictionary);

e) Introduction to SQL Plus - Definition.

4. SQL Operators =|<>><>=<= [NOT] BETWEEN.....AND..... [NOT] IN [Text] NOT like, IS [NOT] NULL, NOT, AND, OR

5. Data Types: Char, numbers, date long, raw, long raw

6. DDL Commands of SQL

- Create Tables
- Alter Table, view
- Drop Table
- Create View-As selected from, where
- Rename
- Create Index

UNIT-II

Data Manipulation Language

1. Select - Select distinct - Select from where

- Select from where order by
- Select group by clause
- Select Group by having clause

2. Insert Into

3. Update Statement

4. Delete Statement

2. Data Control Language

- Roll back
- Revoke
- Grant

3. Sub Query Definition with 2 Levels

4. Aggregate Functions

Sum, Avg, max, min, count, stddev, variance

5. Character Functions

Lower, Upper, Length, Substr, RPAD, LPAD

6. Arithmetic Functions

Round, Trunc, Sqrt, Mod, Abs, Sine

7. Date and Time Functions and Other Miscellaneous Functions

(Add-months, Month-between, NVL, Translate, field concatenation, decode)

8. Conversion Functions (to-char, to-number, to-date)

9. Substitution Variables (&, &&)

UNIT-III

Reporting Using SQL Plus

1. Specifying column heading

2. Formatting columns

3. Char formats

4. Break

5. Inserting spaces when the break value changes

6. Inserting spaces after every row.

7. Break on multiple columns with different spacing

8. Compute

9. T Title

10. B Title

11. Page size line size, pause.

UNIT-IV

Introduction to PL/SQL

1. Relationship between SQL & PL/SQL

2. Advantages of PL/SQL

3. PL/SQL block structure

4. Valuable and Constant declaration

5. Declaration using attributes %type attribute If elsif ends if statement

References

1. Introduction to Data Base System by C.J. Date.
2. Data Base Management System by B.C. Desai.

3. Data Base Concept by Korth.
4. Simplified Approach to by DBMS Kalyani Publications.
5. Oracle :- Developer 2000 by Ivan Bayross.
6. Data base System Concepts & Oracle (SQL/PIS Q) - AP Publications.

Bachelor of Arts / Bachelor of Science
COMPUTER APPLICATION (VOCATIONAL) - SEMESTER-IV
(Session 2019-20)

COURSE CODE: BARM-3124

BECEM - 3124

**RELATIONAL DATABASE MANAGEMENT SYSTEMS & ORACLE
(PRACTICAL)**

Practical based on Relational Data Base Management System & ORACLE